DOCUMENT RESUME

ED 412 883 HE 030 675

TITLE	Graduate Medical Education Consortia: Changing the Governance of Graduate Medical Education to Achieve Physician Workforce Objectives. Council on Graduate Medical Education, Ninth Report.
INSTITUTION	Council on Graduate Medical Education.
SPONS AGENCY	Health Resources and Services Administration (DHHS/PHS), Rockville, MD.
REPORT NO	HRSA-97-15
PUB DATE	1997-06-00
NOTE	55p.; For related documents, see HE 030 673-674.
AVAILABLE FROM	Council on Graduate Medical Education, 5600 Fishers Lane, Rockville, MD 20857.
PUB TYPE	Reports - Evaluative (142)
EDRS PRICE	MF01/PC03 Plus Postage.
DESCRIPTORS	Consortia; Cooperative Programs; *Educational Cooperation; Educational Finance; Educational Objectives; Educational Policy; *Federal Aid; Federal Programs; Federal Regulation; Government School Relationship; *Graduate Medical Education; Health Services; Higher Education; Labor Force Development; Medical Schools; Medical Services; *Needs Assessment; Partnerships in Education; Physicians; *Politics of Education; Professional Education; Public Policy; Teaching Hospitals

ABSTRACT

Earlier reports and studies have endorsed the consortia concept as a vehicle for reorganizing medical education and restructuring the physician workforce. This report by the Council on Graduate Medical Education, which serves in an advisory capacity to the Secretary of the Department of Health and Human Services and to Congress, concurs in this assessment. In support, the report reviews the background of the consortia concept, noting that there is no common operative description that defines current medical education consortia. To sort out the many variations, the Council surveyed several current consortia, collecting and analyzing data on how they perceive themselves, and on their organizational and administrative structures. The report examines and tabulates data on key attributes (mission/membership, governance/authority, administration/management, and medical education programs); measures outcome (educational enhancement, workforce reform, improved administration); takes note of barriers to success (market competition, financial constraints); probes weaknesses; offers a vision of an idealized model; and advocates the funding of several demonstration projects. The report reiterates support of consortia-run medical schools, teaching hospitals and community training sites; and calls for a "shared responsibility" approach to funding graduate medical education; development of national standards for education consortia, and health care reimbursement incentives that promote consortia development. (Contains 160 references.) (JLS)

ED 412 883

COUNCIL ON GRADUATE MEDICAL EDUCATION

Ninth Report

Graduate Medical Education Consortia:

Changing the Governance of Graduate Medical Education to Achieve Physician Workforce Objectives

HE030 675

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☑ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

2

BEST COPY AVAILABLE

JUNE 1997

Council on Graduate Medical Education

Ninth Report

Graduate Medical Education Consortia:

Changing the Governance of Graduate Medical Education to Achieve Physician Workforce Objectives

June 1997

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
Health Resources and Services Administration

The views expressed in this document are solely those of the Council on Graduate Medical Education and do not necessarily represent the views of the Health Resources and Services Administration nor the U.S. Government.

The Council on Graduate Medical Education

The Council on Graduate Medical Education (COGME) was authorized by Congress in 1986 to provide an ongoing assessment of physician workforce trends and to recommend appropriate federal and private sector efforts to address identified needs. The legislation calls for COGME to serve in an advisory capacity to the Secretary of the Department of Health and Human Services (DHHS), the Senate Committee on Labor and Human Resources, and the House of Representatives Committee on Commerce. By statute, the Council was to terminate on September 30, 1995. It has been extended under appropriations legislation.

The legislation specifies that the Council is to comprise 17 members. Appointed individuals are to include representatives of practicing primary care physicians, national and specialty physician organizations, international medical graduates, medical student and house staff associations, schools of medicine and osteopathy, public and private teaching hospitals, health insurers, business, and labor. Federal representation includes the Assistant Secretary for Health, DHHS; the Administrator of the Health Care Financing Administration, DHHS; and the Chief Medical Director of the Veterans Administration.

Charge to the Council

The charge to COGME is broader than the name would imply. Title VII of the Public Health Service Act, as amended by Public Law 99-272 as amended by Title III of the Health Professions Extension Amendments of 1992, requires COGME to provide advice and make recommendations to the Secretary and Congress on a wide variety of issues:

1. The supply and distribution of physicians in the United States
2. Current and future shortages or excesses of physicians in medical and surgical specialties and subspecialties
3. Issues relating to international medical school graduates
4. Appropriate federal policies with respect to the matters specified in items 1-3, including policies concerning changes in the financing of undergraduate and graduate medical education (GME) programs and changes in the types of medical education training in GME programs
5. Appropriate efforts to be carried out by hospitals, schools of medicine, schools of osteopathy, and accrediting bodies with respect to the matters specified in items 1-3, including efforts for changes in undergraduate and GME programs
6. Deficiencies and needs for improvements in existing data bases concerning the supply and distribution of, and postgraduate training programs for, physicians in the United States and steps that should be taken to eliminate those deficiencies

In addition, the Council is to encourage entities providing graduate medical to conduct activities to voluntarily achieve the recommendations of this Council specified in item 5.

COGME Reports

Since its establishment, COGME has submitted the following reports to the DHHS Secretary and Congress:

- First Report of the Council, Volume I and Volume II (1988)
- Second Report: The Financial Status of Teaching Hospitals and the Underrepresentation of Minorities in Medicine (1990)
- Scholar in Residence Report: Reform in Medical Education and Medical Education in the Ambulatory Setting (1991)
- Third Report: Improving Access to Health Care Through Physician Workforce Reform: Directions for the 21st Century (1992)
- Fourth Report: Recommendations to Improve Access to Health Care Through Physician Workforce Reform (1994)
- Fifth Report: Women and Medicine (1995)
- Sixth Report: Managed Health Care: Implications for the Physician Workforce and Medical Education (1995)
- Seventh Report: Physician Workforce Funding Recommendations for Department of Health and Human Services' Programs (1995)
- Eighth Report: Patient Care Physician Supply and Requirements: Testing COGME Recommendations (1996)

Table of Contents

COGME Members and Staff vii

Acknowledgements ix

Executive Summary & Recommendations 1
Prologue 1
Defining Educational & Workforce Outcomes 2
Determining the Content & Assessing the Quality of Medical Education 3
Receiving & Distributing Educational Resources 5
Providing Oversight for the Development & Assessment of Consortia 6
Defining the Organizational Structure That Would Best Serve Educational & Workforce Goals (Consortium Demonstration Projects) 7
Promoting Educational Consortia 7
Epilogue 8

The Consortium Concept 9
Background 9
Expectations & Definitions 9
Council on Graduate Medical Education (COGME) 10
New York State Council on Graduate Medical Education 10
Association of American Medical Colleges 10
American Osteopathic Association 11
MMC/AAMC Survey of GME Consortia 11
AAMC/CHP Survey of GME Consortia 11

Key Attributes 13
Mission & Membership 13
Table 1: Reasons for Convening Consortia 13
Table 2: Dominant Themes 13
Table 3: Educational Enhancement 14
Table 4: Membership 14
Table 5: Workforce Reform 14
Governance & Authority 15
Table 6: Structure 15
Table 7: Function 15
Table 8: Authority 15
Administration & Management 15
Table 9: GME Program Organization 16
Table 10: Finances 16
Table 11: Administration & Management 16
Medical Education 17
Program Orientation 17
Clinical Resources 17
Teaching Resources 17
Role Models & Mentors 17
Curriculum 17
Evaluation & Assessment 18

Summary 18
Table 12: Medical Education 18

Outcome Measures 19
Educational Enhancement 19
Table 13: Achievements: Educational Enhancement 19
Workforce Reform 20
Table 14: Achievements: Workforce Reform 20
Improved Administration 20
Table 15: Achievements: Improved Administration - Working Relations 20
Table 16: Achievements: Improved Administration - Organizational Efficiency 21

Confounding Influences 23
Table 17: Major Barriers to Success 23
Market Competition 23
Financial Constraints 23
Graduate Medical Education Funding 23
Financing Community-Based Education 23
Service Needs of Academic Medical Centers 23

Strengths & Weaknesses 27
Figure 1: GME Sponsorship - Effect on GME Program Administration 28
Figure 2: Fiscal Authority - Effect on GME Program Administration 28
Figure 3: Mission Delineation - Effect on the Physician Workforce 29
Figure 4: Mission Delineation - Effect on GME Program Administration 29

Idealized Models 31

Consortium Demonstration Projects 35
Table 18: Effects of Hypothetical Workforce Contingency 35
Table 19: Potential Funding Incentives 36

Promoting Educational Consortia 37

Summary & Conclusions 39

References 41

COGME Members and Staff

David A. Kindig, M.D., Ph.D.
Chairman, COGME
Professor of Preventive Medicine
Center for Health Sciences
Department of Preventive Medicine
University of Wisconsin
Madison, Wisconsin

Stuart J. Marylander
Vice Chairman, COGME
Informatix, LLC
Beverly Hills, California

George T. Bryan, M.D.
Chair, GME Consortia Work Group
Dean Emeritus
University of Texas Medical Branch
Galveston, Texas

JudyAnn Bigby, M.D.
Division of General Medicine
Brigham & Women's Hospital
Boston, Massachusetts

Paul C. Brucker, M.D.
President, Thomas Jefferson University
Philadelphia, Pennsylvania

Sergio A. Bustamante, M.D.
Director of Pediatric Medical Education
Department of Psychiatry
Childrens Regional Hospital at Cooper Hospital
Camden, New Jersey

Jack M. Colwill, M.D.
Professor and Chairman
Department of Family and Community Medicine
University of Missouri-Columbia
Columbia, Missouri

Peggy Connerton, Ph.D.
AFL-CIO Service Employees
International Union
Washington, D.C.

Christine Gasiciel
Manager of Health Care Plans
General Motors
Detroit, Michigan

Lawrence U. Haspel, D.O.
Senior Vice President
Metropolitan Chicago Health Care Council
Chicago, Illinois

Huey Mays, M.D., M.B.A., M.P.H.
Stockton, New Jersey

Elizabeth M. Short, M.D.
Associate Chief Medical Director for Academic Affairs
Department of Veterans Affairs
Washington, D.C.

Robert L. Summitt, M.D.
Dean, College of Medicine
University of Tennessee
Health Science Center
Memphis, Tennessee

Eric E. Whitaker, M.D.
Internal Medicine Resident
University of California at San Francisco
San Francisco, California

Modena H. Wilson, M.D., M.P.H.
Director Division General Pediatrics Johns Hopkins University School of Medicine
Baltimore, Maryland

Barbara Wynn
Acting Director
Bureau of Policy Development
Health Care Financing Administration
Baltimore, Maryland

COGME Staff*

Enrique S. Fernandez, M.D., M.S.Ed.
Executive Secretary
Director, Division of Medicine

F. Lawrence Clare, M.D., M.P.H.
Deputy Executive Secretary
Deputy Chief, Special Projects and Data Analysis Branch, Division of Medicine

Stanford M. Bastacky, D.M.D., M.S.H.A.
Chief, Special Projects and Data Analysis Branch, Division of Medicine

Jerald M. Katzoff
Staff Liaison, Physician Workforce and Medical Education Consortia Issues

P. Hannah Davis, M.S.
Staff Liaison, Minorities in Medicine

Howard C. Davis, Ph.D.
Staff Liaison, International Medical Graduates

Sandra R. Gamliel
Senior Economist

Paul J. Gilligan, M.H.S.
Staff Liaison, Competencies for Managed Care

John Rodak, M.S. (Hyg.), M.S.(H.S.A.)
Staff Liaison, Geographic Distribution and Medical Education Consortia Issues

Eva M. Stone
Committee Management Assistant

Velma Proctor
Secretary

Anne Patterson
Secretary

---

*COGME is staffed by the Health Resources and Services Administration's Bureau of Health Professions

ACKNOWLEDGMENTS

COGME GME Consortia Work Group

COGME Members

George T. Bryan, M.D., Chair
Jack M. Colwill, M.D.
Lawrence U. Haspel, D.O.
Robert L. Summitt, M.D.
Barbara Wynn

Other Work Group Members

John Naughton, M.D.
Vice President for Clinical Affairs and Dean
School of Medicine and Biomedical Sciences
SUNY-Buffalo
Buffalo, New York

Carl J. Getto, M.D.
Dean and Provost
Southern Illinois University School of Medicine
Springfield, Illinois

Bureau of Health Professions Staff

Jerald M. Katzoff, Staff Liaison and Project Officer, GME Consortia Report
John Rodak, M.S. (Hyg.), M.S.(H.S.A.)
F. Lawrence Clare, M.D., M.P.H.
Brenda Pierce, B.A.

Contractors

We gratefully acknowledge the assistance of Malcolm Cox, M.D., Professor of Medicine and Associate Dean, Network and Primary Care Education, University of Pennsylvania School of Medicine and Health System, contractor to the Council who prepared the draft that formed the Council's Ninth Report. COGME also acknowledges the contribution of Richard Schmidt, President, RSA, Ltd., who summarized thematically over forty organizational and individual comments to an earlier draft.

We are deeply indebted to the over forty organizations and individuals that responded to our request for comment on our draft report. These comments and critiques helped greatly to enhance the Council's final report. Finally, we gratefully acknowledge the leadership of Fitzhugh Mullan, M.D., retired Director of the Bureau of Health Professions, for conceptualizing for COGME the potential importance of medical education consortia for achieving physician workforce goals.

Executive Summary & Recommendations

PROLOGUE

The United States faces an overabundance of physicians that will extend well into the next century, most of the excess being accounted for by certain categories of specialists and subspecialists. At the same time, policy makers, the managed care industry and leaders of academic medicine express concern that the traditional medical education system is not providing all the competencies necessary for the effective practice of medicine in the modern health care market place. More training in ambulatory care, more community-based physician role models and more interaction with other health care professionals are increasingly advocated.

The physician workforce is the product of a large and heterogeneous enterprise—an enterprise that has been slow to change in the past and which has yet to achieve consensus on how to reshape itself for the future. At the core of this heterogeneity is a broad and complex mission involving health care, biomedical research and medical education. More than mission complexity, however, reform is hampered by the absence of an integrated system of governance for medical education.

Fragmented governance is a particular problem at the level of graduate medical education, where hospital executives, clinical service chiefs, medical school deans and academic department chairs often represent different constituencies, and have to respond to a confusing plethora of accrediting and certifying bodies and other professional organizations. The increasing emphasis on education in ambulatory care settings, puts further stress on the present system of governance.

In order to teach those competencies necessary in a managed care world and to contain health care costs, multiple health care provider and planning organizations must be involved. The day when medical education could be confined to one entity, the university hospital or its surrogate, has passed. Once said, then new systems for addressing physician workforce issues, for the measurement and maintenance of educational quality, for the administration of educational programs, for allowing input from the various stakeholders, and providing for an equitable distribution of resources are both reasonable and necessary. In principle, the consortium concept fulfills this need.

Mutual partnerships and collaborations have long been an essential element for successful medical education, and consortia provide a means of perpetuating, and where necessary expanding, such interactions in the future. Consortia presently occupy the middle portion of the spectrum of entities involved in graduate medical education, bridging the territory between traditional affiliations and acquisitions or mergers. Consortia differ substantially from affiliations, which imply no formal organization or collaboration beyond that stipulated by the agreement, are typically bilateral (rather than multilateral), and are usually negotiated independently with each partner (rather than collectively among a broader range of partners). Consortia also differ substantially from acquisitions or mergers, which lead to the formation of a single organization (rather than a cooperative alliance of institutions with shared interests) and imply a pooling of all assets and a surrender of fiduciary control (neither of which occurs during the formation of a consortium).

Many authorities, including the Council on Graduate Medical Education (COGME)—most notably in its Fourth Report, have endorsed consortia as a vehicle for reorganizing medical education and restructuring the physician workforce while maintaining the flexibility to draw upon the expertise and ingenuity of a broad and diverse group of stakeholders. Consortium advocates stress that consortia would be better positioned than any national organization to deal with local or regional medical training realities and health care needs. They believe that consortia would improve the organizational structure and governance of residency training programs and would provide an equitable mechanism for distributing residency training positions. They believe also that consortia would bring together the complementary strengths of different institutions, thereby enhancing educational quality and better aligning education with the needs of the newly emerging health care system.

Two recent national surveys of graduate medical education consortia—conducted by the Association of American Medical Colleges in conjunction with the Maine Medical Center in 1993 (MMC/AAMC Survey) and the Center for the Health Professions at the University of California, San Francisco in 1995 (AAMC/CHP Survey)—have indicated that consortia do provide a framework within which medical education, especially graduate medical education, can be critically examined and an equitable forum within which all interested

constituencies can participate. Indeed, existing consortia can point to enhanced working relations and management efficiencies with justifiable pride (Tables 15 & 16).

However, despite an almost universal commitment to enhancing education (Tables 2 & 3), relatively few consortia have dealt with medical education in a truly comprehensive fashion (Tables 12 & 13). Nor have consortia, as a group, yet instituted changes that would be expected to influence the size, composition, geographic distribution or diversity of the physician workforce (Tables 4, 5 & 14). Given that relatively few consortia control residency positions, or the resources that accompany residency positions (Tables 8–11), these findings are not entirely unexpected.

Given this mixed performance, the question arises whether the widespread adoption of consortia would be an appropriate vehicle for reorganizing the presently fragmented graduate medical education system. In thinking about this, it is important to emphasize that the development of consortia is not a goal unto itself. Rather, it is a means to an end. There is no inherent linkage between the concept of educational consortia and either the quality of medical education or physician workforce reform. One can exist without the other, and one does not necessarily result in the other.

Nonetheless, COGME believes that the consortium concept provides the inherent organizational flexibility needed to draw upon the expertise of the broad and diverse group of stakeholders that, collectively, will be necessary to reorganize medical education. Further, COGME believes that appropriately structured consortia would provide the foundation upon which substantive physician workforce reform could take place.

The promotion of medical education consortia should not be seen as a rejection of other innovative approaches to reorganizing graduate medical education. Given the mixed results emanating from existing consortia, present uncertainty regarding the shape of the future health care system, and the overall complexity of the task at hand, it would be premature to mandate the use of educational consortia as the sole vehicle for restructuring the physician workforce.

Educational consortia are presently burdened with expectations and hobbled by the lack of real authority. It is unrealistic to expect consortia to improve the structure and governance of medical education and to align physician training with health care needs unless they are appropriately structured and have access to the resources to do so. In seeking to define how educational consortia could best serve as both a catalyst and a unifying force in reorganizing medical education, this report addresses questions of organizational structure, authority and responsibility, examines funding mechanisms and how educational resources should be distributed, and provides policy makers with a blueprint for action.

COGME believes that consortia should include medical schools, teaching hospitals and community training sites, and promote an interdisciplinary approach to health care delivery. To be effective, COGME believes that consortia must have local sponsorship authority and responsibility for graduate medical education, and access to the financial resources necessary to reform graduate medical education.

COGME supports a "shared responsibility" approach to funding graduate medical education, in which all payers of health care participate, and proposes that consortia be eligible to receive graduate medical education payments. COGME also proposes that graduate medical education payments be disbursed to training sites on the basis of actual expenses incurred. Finally, COGME advocates funding a series of consortia demonstration projects, establishing an appropriately constituted body to oversee the development of national standards for educational consortia, and enacting health care reimbursement incentives to promote consortium development.

DEFINING EDUCATIONAL & WORKFORCE OUTCOMES

Organizations function best when they have a comprehensive vision. In the case of educational consortia, this vision should include a mission that is anchored by a commitment to providing each and every graduate with all necessary career-specific competencies. However, a focus on individual competency is insufficient: Consortia should also entertain a broader view of competence, one whose frame of reference is the physician workforce as a whole. Simply put, "workforce competence" requires that the overall process of medical education be organized within the framework of societal needs and expectations.

Consortia must recognize the need for a national workforce that, collectively, has relevant practice, research and educational expertise. Consortia must also recognize the need for a rationally distributed regional workforce with appropriate generalist and subspecialist practice skills. And consortia must also be responsive to social and political needs, championing the need for a physician workforce

that reflects the diversity of the population from which it is drawn. Thus, although education should be a consortium's primary priority, its product must also be able to meet present and future health care needs.

Consortia, no less than any other academic constituency, will be asked to defend their "education template". This does not mean that consortia have to reinvent the entire process of medical education, assume all (or even most) of the responsibilities of their individual members, or usurp the prerogatives of accrediting or licensing bodies. Rather, consortia should function as umbrellas under which medical education is reorganized, acting as guardians of the educational environment and ensuring that their product has societal relevance. In these matters they should act for and on behalf of their members, already having organized and catalyzed the necessary internal debate and already having led the partnership to a collective, if not unitary, view of its future.

To do so effectively, consortia will need clearly delineated educational and workforce goals, a strong sense of national and community health care needs, and the inherent authority to better align education with present and future physician workforce needs. Perhaps not surprisingly, consortia with a mission that includes workforce reform as a priority, have been more successful in enhancing generalist practice skills and increasing the output of generalists than consortia that lack an explicit commitment to reshaping the physician workforce (Figure 3).

Studies of existing consortia have also shown that management efficiencies are achieved more commonly, and that the cost of administering educational programs is less, in consortia with a mission that explicitly identifies improving the administration of educational programs as an organizational priority (Figure 4). A commitment to management excellence and an efficient administrative infrastructure will almost certainly also be important determinants of the ability of consortia to advance medical education and reform the physician workforce.

With these considerations in mind, COGME recommends that consortia should:

- **Set explicit educational and workforce goals and evaluate their accomplishments;**
- **Participate with local/regional health care agencies in determining health resource needs; and**
- **Adapt programs in response to national, state and community health resource needs.**

DETERMINING THE CONTENT & ASSESSING THE QUALITY OF MEDICAL EDUCATION

Undergraduate, graduate and continuing medical education, though in many ways operationally distinct, nonetheless represent a continuum of educational activity. Indeed, "life-long learning" is an attribute that medical educators have long sought to instill at the earliest possible time in their students. Most would agree, too, that medical practice, research and education are inextricably linked, education being the vehicle that translates research into practice both within and across generations. Given this broad context, inherently multilateral organizations such as consortia are ideally situated to bring together the many disparate institutions and groups—medical schools, teaching hospitals, managed care organizations, community training sites, and so on—now required to educate physicians. Continued compartmentalization of the teaching functions of these critical resources can only be counterproductive.

Organizational membership not only presupposes mission but also provides insight into the feasibility of achieving stated goals. A goal to facilitate the transition from medical student to supervised practitioner (resident) makes little sense if medical schools and teaching hospitals are not present. Reshaping residency programs may be an unachievable goal unless hospital executives, deans, clinical service chiefs, and academic department chairs and can all be brought to agreement. A goal to enhance interdisciplinary approaches to health care delivery, makes little sense unless a broad spectrum of health professionals is sitting at the table. Likewise, plans to enhance ambulatory care training in community settings is unlikely to succeed without the active involvement of public health authorities and physicians in practice. Indeed, it is difficult to visualize a quality medical education program in the future that does not involve a variety of different constituencies, that is not collaborative in outlook, and that is not sensitive to the differences between its individual partners.

Medical schools have particular expertise in curriculum development and evaluation, as well as research and scholarly activities. Hospitals and community training sites have particular expertise in the art and practice of medicine, and are required for both undergraduate and graduate medical education. The consortial model would provide for a free interchange of ideas, for resource sharing and for the coordination and strengthening of programs. Already common in university-based or affiliated residency programs, consortia could also extend the

incalculable educational and mentoring benefits of different levels of students working closely together to residency programs not presently so endowed. Consortia could also help to translate the full potential of medical student-resident interactions, already so important in the inpatient arena, to the ambulatory care environment as well.

Consortia could also serve as a vehicle to maintain an appropriate balance between education and clinical service—between the resident as "student" and the resident as "employee". This may be particularly important where overlapping, and therefore potentially competitive, health care delivery systems form the operational matrix of a consortium. In such circumstances, the consortium should assume the primary responsibility for delineating just how a common educational mission will interface with the different delivery systems involved.

Given these considerations, it is not surprising that almost all existing consortia include allopathic or osteopathic medical schools (Table 4). Although some in the medical education community have expressed concern that medical schools (or large academic medical centers) would inevitably dominate consortia, many existing consortia appear to function democratically and in most cases the other partners do not feel dominated by the medical school (Table 7). Moreover, the majority of the country's allopathic graduate medical education programs already have substantive relationships with the nation's medical schools. In the osteopathic community, similar ties have recently been extended and codified by the approval of a new graduate medical education accreditation system that requires all Osteopathic Postdoctoral Training Institutions (essentially consortia of different graduate medical education sites) to contain at least one school of medicine.

Thus, consortia should ensure that the training environment is sufficiently broad to encompass all elements of graduate medical education and, where appropriate, undergraduate medical education as well. Towards this end, the training environment should be carefully evaluated, and enhanced where necessary. Medical professionalism, scientific literacy and a commitment to life long learning are the foundation of medical education, but the curriculum must also provide graduates with the ability to practice effectively in the modern health care environment. Generalism should be fostered, specialist practice and procedural skills enhanced, and the research and educational expertise of the physician workforce assured. The recruitment and promotion of women and minorities should be given attention and the problem of the medically-underserved in rural and inner city areas should also be addressed.

A central element of this model is that the consortium, acting collectively, should have overall responsibility for graduate medical education, channeling reform in appropriate directions, even though its individual members will remain the agents of the educational process itself. The model assumes that medical schools will retain primary responsibility for undergraduate medical education, but that consortia, rather than hospitals or any other group, institution or organization involved presently or in the future in training residents, will have primary responsibility for graduate medical education. Such an approach is intended to strengthen and reshape medical education by facilitating interactions between medical schools, hospitals, community teaching sites, managed care organizations, and the like. Mutual interdependence, rather than the dominance of any particular partner, is the goal.

To function in this fashion, consortia must have the authority to reorganize graduate medical education within their local domain. Acting within the guidelines established by the Accreditation Council for Graduate Medical Education and the American Osteopathic Association's Council on Postdoctoral Training (and any other appropriate regulatory agencies), consortia must be able to set standards, to evaluate residency program quality, and to choose to sponsor some residency programs (but not others). Controlling the content of medical education should be the prerogative of the consortium rather than a right of individual partners, and the consortium should assume responsibility for the quality of all graduate medical education programs under its purview.

If consortia, like individual teaching hospitals presently, are to have the authority to reaffirm, and where necessary, remake their product, they must control the "currency" of graduate medical education—residency programs and positions. Present accreditation guidelines dictate that the official sponsoring institution for any residency program has ultimate responsibility for the conduct of that program. If a consortium, rather than any of its individual members, were the official sponsor, the consortium would automatically assume this responsibility. Duly constituted educational consortia are already accepted by both the Accreditation Council for Graduate Medical Education and the American Osteopathic Association's Council on Postdoctoral Training as legitimate graduate medical education sponsors. However, unambiguous policies that would facilitate the transfer of

authority from individual institutions and programs to consortia would have to be developed.

Official sponsorship of residency programs by consortia could bring financial benefits as well. Studies of existing consortia have shown that the cost of administering educational programs is lower in consortia that function as the official sponsor of all graduate medical education programs under their purview as opposed to those in which individual members retain control of their own programs (Figure 1). Thus, official sponsorship of residency programs appears to be an important determinant of administrative success. Moreover, an efficient administrative infrastructure will almost certainly also be a critical arbiter of the ability of consortia to advance medical education and reform the physician workforce.

With these considerations in mind, COGME recommends that consortia should:

- **Include medical schools and teaching hospitals;**
- **Include community-based training sites;**
- **Promote generalism and the competencies required for managed care practice;**
- **Foster an interdisciplinary approach to health care delivery;**
- **Have sponsorship authority and responsibility for graduate medical education; and**
- **Serve as a vehicle for coordinating undergraduate and graduate medical education.**

RECEIVING & DISTRIBUTING EDUCATIONAL RESOURCES

Given the present methodology for calculating Medicare direct and indirect graduate medical education support, which obstructs rather than facilitates the flow of payments to consortia and community-based training sites, it is understandable that such payments almost invariably are made to hospitals and that, for the most part, individual hospitals within existing consortia maintain their own graduate medical education revenue accounts.

Despite this, a number of consortia have established some measure of collective fiscal authority. About half of the consortia responding to the AAMC/CHP Survey, for example, reported that disbursement of Medicare direct graduate medical education payments was controlled by the consortium as a whole rather than by individual members (Table 10). Consortia with such authority reported management efficiencies much more commonly than consortia in which payments were controlled by individual members, and the cost of administering educational programs was lower as well (Figure 2). Moreover, developmental and operational costs were more likely to be spread equitably across the entire membership (see p. 40).

It is hardly surprising that collective control of graduate medical education payments is a determinant of administrative success. Nor that partnership equity follows the provision of fiscal authority. It is also likely that the scope and nature of the financial authority individual members cede to a consortium will be a critical arbiter of the power of the organization—and of its ability to reform medical education and reshape the physician workforce. After all, to be effective, consortia must have access to the resources essential to the conduct of graduate medical education.

Consequently, COGME recommends that consortia should:

- **Have either a prospective agreement on how to determine and distribute graduate medical education payments or a common graduate medical education accounting system;**
- **Develop mechanisms to ensure that graduate medical education payments are disbursed to training sites on the basis of actual expenses incurred; and**
- **Develop mechanisms to ensure that operating costs are shared equitably by all members of the organization.**

Graduate medical education is currently financed from a variety of sources, including Medicare, Medicaid, private insurers, and faculty practice plans, amongst others. However, with the exception of Medicare (and certain Medicaid programs), it has been difficult to quantitate the precise magnitude of such support or to determine whether "educational" monies are truly utilized for education. Because of this, as well as to provide a reliable and equitable financing system, medical educators (and some policy makers) are pressing for the establishment of a "shared responsibility" or "all-payer" system to finance graduate medical education. By ensuring a broad involvement of state and private sector medical insurance systems, together with Medicare, "shared responsibility" financing of graduate medical education would greatly facilitate consortium development, and COGME strongly supports such an approach.

The financing of community-based education is particularly troublesome because of statutory limitations on the direct flow of Medicare graduate medical education payments to health care delivery sites other than hospitals and fiscal disincentives that limit the ability of hospitals to channel Medicare graduate medical education payments to community-based ambulatory care sites. The capital costs of developing non-traditional educational sites and the negative impact of education on clinical productivity in the ambulatory environment raise similar concerns.

Legislation to allow the Health Care Financing Administration to direct Medicare graduate medical education payments to appropriately constituted consortia (and other organizations legitimately involved in graduate medical education) is long overdue. Ideally, such disbursement should not only include Medicare direct graduate medical education payments, but funds equivalent in purpose to Medicare indirect graduate medical education payments as well.

Indirect graduate medical education payments provide compensation for the additional inpatient costs incurred for the specialized services and treatment programs provided by teaching institutions and the additional costs associated with the teaching of residents, and have a vital role in maintaining the financial viability of teaching hospitals. However, such "additional costs" are not restricted to the inpatient environment alone. They arise in the ambulatory care arena, be it hospital clinic or community physician office, as well. As such, they are as worthy of support as inpatient educational costs, especially as the proportion of medical education conducted outside of hospitals increases.

Mechanisms that would resolve all these difficulties have yet to be identified, but both statutory relief and fiscal incentives for academic medical centers to shift appropriate educational costs out of the inpatient and into the ambulatory environment will be needed. As residents move to non-hospital training sites, the "additional costs" born by hospitals should decline. This should allow the transfer of an appropriate portion of Medicare indirect graduate medical education payments to consortia, with subsequent flow of these monies to the non-hospital entities actually incurring the costs of ambulatory care education. Without some mechanism of this sort, it is difficult to envisage how the substantial cost of education in the ambulatory environment could be addressed.

With these considerations in mind, if consortia are to have a role in restructuring the physician workforce, COGME recommends that:

- **Statutory limitations precluding the flow of Medicare graduate medical education payments to appropriately constituted educational consortia be eliminated;**
- **The costs of developing and maintaining hospital- and community-based ambulatory care training sites be taken into account when adjustments in Medicare direct and indirect graduate medical education payments are contemplated;**
- **If an all-payer system for the support of graduate medical education is enacted, appropriately constituted consortia be able to receive payments from all health care payers; and**
- **The costs of developing and maintaining hospital and community-based ambulatory care training sites be carefully considered in any new system for financing medical education.**

PROVIDING OVERSIGHT FOR THE DEVELOPMENT & ASSESSMENT OF CONSORTIA

A viable consortium model must provide for a substantive role in defining educational and workforce outcomes, determining the content and assessing the quality of medical education, and receiving and distributing educational resources. Such a role is best assured by promulgating national standards for educational consortia. However, the development of standards is unlikely to proceed efficiently in the absence of an appropriately constituted oversight body.

Consequently, COGME recommends that:

- **An appropriately constituted advisory body, reporting to the Secretary of Health and Human Services, be empowered to guide the development of national standards for graduate medical education consortia;**
- **These standards be directed at achieving national educational and workforce goals in an accountable and cost-effective manner; and**
- **This advisory body also oversee the assessment of the effectiveness of consortia in achieving national educational and workforce goals.**

In making these recommendations, COGME recognizes the importance of similar bodies already

implemented or under consideration at the state level (for example, in New York and Tennessee), and encourages the joint development and implementation of standards for educational consortia by appropriate national, state and regional oversight bodies.

DEFINING THE ORGANIZATIONAL STRUCTURE THAT WOULD BEST SERVE EDUCATIONAL & WORKFORCE GOALS

(CONSORTIUM DEMONSTRATION PROJECTS)

If consortia are to be an integral element of the graduate medical education system, it follows that they must be structured in a fashion that will enhance their effectiveness. This should not be taken to imply that there is a single "correct" model against which all consortia should be measured or even that presently available information allows prediction of the "best" model. Nonetheless, there are certain characteristics that should be imbedded in any consortium, no matter how its developers intend to merge or restructure their individual organizations.

To justify public support, consortia demonstration projects must be committed to providing a cost-effective administrative framework within which education and workforce reform can occur. In return, all payers of health care services should provide the funds necessary to ensure successful completion of the project.

To delineate how consortia might best be structured to achieve national, regional and local educational and workforce goals in an accountable and cost-effective manner, COGME recommends that:

- **Funds be provided for twelve consortium demonstration projects;**
- **In the absence of enactment of an "all-payer" fund for graduate medical education, the federal government provide these funds, but the states and private medical insurance sector be encouraged to provide matching support;**
- **Funds be awarded on the basis of a peer reviewed, competitive process;**
- **Four projects be initiated each year in fiscal years 1998, 1999 and 2000; and**
- **Each project be funded for an initial period of three years, with the opportunity for renewal for an additional two three-year periods, for a total of nine years.**

To promote innovation, the financial risks inherent in these projects, especially in altering the size and composition of graduate medical education programs, should be reduced. Neither the consortium collectively, nor its individual partners, should stand to lose graduate medical education payments during the demonstration period. However, any "hold harmless" provision should be made contingent on the consortium agreeing to a "workforce contingency"; that is, agreeing to restructure its training programs in a defined fashion (see pp. 47-49 & Table 18, for an example).

With these considerations in mind, COGME recommends that:

> **The consortium as a whole, and its individual members, be held "financially harmless" (Medicare direct and indirect graduate medical education payments, and if possible state and private sector graduate medical education payments as well, be guaranteed at their respective levels the year prior to the award) for the duration of the award, but only provided that the consortium agrees to predefined standards for changing the size and/or composition of its residency training programs.**

Demonstration project funding could also contain incentives to ensure certain organizational structures (for example, the transfer of official sponsorship of residency programs from individual members to the consortium) and to promote physician workforce policy goals (for example, increasing the proportions of generalist, women and minority residents, increasing the number of graduates practicing in Health Professions Shortage Areas, and so on) (Table 19).

PROMOTING EDUCATIONAL CONSORTIA

Determining how educational consortia might best be structured will likely prove a more simple task than promoting their widespread implementation. Consortia are still relatively rare. One reason for this is that, for the most part, policy makers have yet to devise financing methods that favor, or even use, consortia. To promote the development of consortia, federal and state policy makers will have to provide appropriate incentives.

Incentives to promote the widespread development of consortia could be modeled after those

established by the consortia demonstration projects. At a minimum, these should include financial incentives that would enhance the composition, geographic distribution and diversity of the physician workforce. In addition, these incentives ideally should have a "shared responsibility" mantra, including defined contributions from all payers of health care services: Medicare, Medicaid and the private insurance industry alike.

Accordingly, COGME recommends that:

- **Federal and State governments develop health care reimbursement incentives for the organization of consortia that would achieve educational and physician workforce goals in an accountable and cost-effective manner;**
- **Reimbursement incentives include Medicare, Medicaid and private sector graduate medical education payments; and**
- **These incentives be phased in progressively over a period of 3 to 5 years.**

EPILOGUE

Implementing and guiding such an ambitious initiative will require conscious efforts not only on the part of consortium organizers but also by policy makers and the leadership of academic medicine, as well as input and support from all sectors of the health care industry. Medical education consortia should not be viewed as a panacea for all the problems of the present system of medical education. Consortia, acting alone, cannot deal with the separation of responsibility for medical education or the malalignment of medical education with health care needs. These are tasks for the leadership of academic medicine as a whole. Nor should the concept of medical education consortia—or its avid promotion—be used to divert attention from the lack of a secure funding base for medical education, the service needs of academic medical centers or the health care needs of the uninsured. Most importantly, the promotion of medical education consortia should not be seen as a substitute for reforming the financing of graduate medical education (or medical education in general) or for substantive reform of the health care system itself.

Until there are unambiguous incentives for expanding the content, and diversifying the process, of medical education, health care delivery expectations will likely continue to exceed the performance of the present health care system. There is no inherent linkage between the concept of medical education consortia and the quality of medical education. Conscious efforts on the part of consortia to address the quality of medical education and aggressive enforcement of standards on the part of accrediting and licensing bodies will be necessary if consortia are to be a force in maintaining and enhancing educational quality. This is a task that will require the active and explicit support of the leadership of academic medicine, and a realization on the part of policy makers that quality is best assured by reorganizing graduate medical education around the institutions best equipped to deal with it—the nation's universities and medical schools.

The idea that graduate medical education consortia, in and of themselves, will be able to improve the composition, geographic distribution and diversity of the physician workforce is also seriously flawed. There is no inherent linkage between the concept of medical education consortia and the achievement of national physician workforce objectives. Conscious efforts on the part of consortia to address physician workforce objectives and appropriate incentives on the part of policy makers to encourage and require them to do so will be necessary if consortia are to be a means or a force in meeting those objectives. This is a task that will require extensive input from all sectors of the health care industry and the experience of a broad range of social, economic and legal policy experts as well.

COGME believes that the consortium concept could serve both as a catalyst and as a unifying force in reorganizing medical education. COGME further believes that appropriately structured educational consortia could provide a solid foundation upon which substantive educational and workforce reform could take place. Such a role requires that consortia have the local authority and responsibility to determine the content and assess the quality of medical education, to define educational and workforce outcomes, and to receive and distribute educational resources.

COGME considers support of the specific recommendations in this report a wise and prudent investment in the continuing effort to provide the nation with easy and equal access to comprehensive, high quality health care. However, COGME emphasizes that although consortia may provide a fertile environment for reform, reform will not take root until more deep-seated problems in the governance and financing of medical education are resolved and the health care system itself is restructured. It is only within such a broad context that an appropriate template for the reform of medical education will be found.

The Consortium Concept

BACKGROUND

The United States faces an overabundance of physicians that will extend well into the next century, most of the excess being accounted for by certain categories of specialists and subspecialists.[1] Whether the number of primary care practitioners will be sufficient to meet the needs of the newly emerging health care system is more controversial, a clear determination hinging on precisely how this group is defined,[2] the extent to which subspecialists already provide primary care,[3] the feasibility of retraining subspecialists as generalists,[4] and the roles that will be assumed by advanced practice nurses and other non-physician providers in the health care delivery system.[5]

At the same time, policy makers, the managed care industry and leaders of academic medicine express concern that the traditional medical education system is not providing all the competencies necessary for the effective practice of medicine, especially in the modern health care market place.[6] More training in ambulatory care, more community physician role models and more interaction with other health care professionals are increasingly advocated.

The physician workforce is the product of a large and heterogeneous enterprise—an enterprise that has been slow to change in the past and which has yet to achieve consensus on how to reshape itself for the future. At the core of this heterogeneity is a broad and complex mission involving health care, biomedical research and medical education.[7] More than mission complexity, however, reform is hampered by the absence of an integrated system of governance for medical education in general, and for graduate medical education in particular.

The separation of responsibility for medical education between universities, medical schools and teaching hospitals makes coordination, let alone substantive change, difficult. It is at the "interfaces" that the lack of a seamless educational continuum is, perhaps, most evident. Given the current division of responsibility between universities and medical schools, for example, how can pre-medical and medical undergraduate courses in the sciences and humanities be integrated? Similarly, given the division of responsibility between medical schools and teaching hospitals for undergraduate and graduate medical education, how can the transition from student to supervised practitioner be facilitated?

Fragmented governance is a particular problem at the level of graduate medical education, where hospital executives, clinical service chiefs, medical school deans and academic department chairs often represent different constituencies and have to respond to a confusing plethora of accrediting and certifying bodies and other professional organizations.[8] The increasing emphasis on education in ambulatory care settings,[9] puts further stress on the present system of governance.

Reform is made more difficult still by the erosion of what was previously a relatively secure funding base for graduate medical education,[10] by uncertainty regarding how an expansion of ambulatory care education will be financed, and by the heavy service needs of academic medical centers, many of which shoulder a disproportionate share of medical care for the indigent.[11]

In order to teach those competencies necessary in a managed care world and to contain health care costs, multiple health care provider and planning organizations must be involved. The day when medical education could be confined to one entity, the university hospital or its surrogate, has passed. Once said, then new systems for addressing physician workforce issues, for the measurement and maintenance of educational quality, for the administration of educational programs, for allowing input from the various stakeholders, and providing for an equitable distribution of resources are both reasonable and necessary. In principle, the consortium concept fulfills this need.

EXPECTATIONS & DEFINITIONS

Given the turmoil in the health care system, suggestions that academic medicine lacks an appropriate template for reconfiguring medical education, especially graduate medical education, are hardly surprising. It is within this context that the formation of local or regional "educational consortia" has been advanced as a way to reorganize medical education. Consortium advocates stress the importance of recognizing and promoting diversity in an inherently pluralistic society. They also point to the fact that different medical schools and graduate medical education programs have diverse, and oftentimes complementary, strengths and objectives, and that this diversity is the ultimate source of the spirit of inquiry and innovation that will be necessary to anchor any future health care system.

Thus, while not necessarily excluding a coordinating or oversight role for a national council, consortium advocates emphasize the need to maintain control of graduate medical education, and especially the distribution of training positions, at a local or regional level.

Mutual partnerships and collaborations have long been an essential element for successful medical education, and consortia provide a means of perpetuating, and where necessary expanding, such interactions in the future. Consortia presently occupy the middle portion of the spectrum of entities involved in graduate medical education, bridging the territory between traditional affiliations on the one hand and acquisitions or mergers on the other. Consortia differ substantially from affiliations, which imply no formal organization or collaboration beyond that stipulated by the agreement, are typically bilateral (rather than multilateral), and are usually negotiated independently with each partner (rather than collectively among a broader range of partners). Consortia also differ substantially from acquisitions or mergers, which lead to the formation of a single organization (rather than a cooperative alliance of institutions with shared interests) and imply a pooling of all assets and a surrender of fiduciary control (neither of which occurs during the formation of a consortium).

Graduate medical education consortia are presently extremely varied organizations—so much so that finding a common operating definition is problematic. Proponents of educational consortia oftentimes use the term loosely while embracing the concept to advance a particular agenda. Nonetheless, the expectations of several key advocacy groups and the definitions used in two recent national surveys of educational consortia provide a convenient starting point for amplifying the consortium concept.

Council on Graduate Medical Education (COGME)[12]

- The consortium approach is most compatible with the principles established for attaining workforce goals for total supply and specialty mix.
- The consortium approach minimizes federal government micromanagement and maximizes private sector input, flexibility and creativity.
- Each consortium collectively would make decisions about its mix of positions based on local needs and under broad national guidelines.
- Decisions would be made collectively, based in part on local, state and regional health care system requirements and the quality of the educational setting.
- Each consortium would be required to include one or more allopathic or osteopathic medical schools and a diversity of other organizations who produce physicians or which represent the public.
- Designating a medical school responsible and accountable for the consortium would help integrate the currently fragmented system of undergraduate and graduate education.
- All institutions training residents would be required to join a consortium.
- Graduate medical education funds would be provided to approved academic consortia who commit to limit total positions filled in accredited programs to those allocated and to contribute to the national goal of producing 50% generalist graduates.
- The funds would follow residents to their sites of training to cover appropriate faculty and overhead costs, as well as the costs of coordinating the consortium.

New York State Council on Graduate Medical Education[13]

- Graduate medical education consortia, with medical schools playing an integral role, are the optimal organizational structures for graduate medical education.
- Consortia can enhance the educational quality of residency programs.
- Through consortia, medical schools, their affiliated hospitals, and other teaching sites can jointly define the educational needs of residents and coordinate the development of core curricula, placement of residents, and allocation of educational resources in a way that is both efficient and responsive to the needs of society.

Association of American Medical Colleges[14]

- Forming medical education consortia . . . could permit and facilitate residency program sponsors and educational sites to address objectives such as better integration and continuity of undergraduate and graduate training programs.
- . . . could enhance program quality, improve resident recruitment and services, provide and encourage increased ambulatory care

experiences, and coordinate planning of medical education and service delivery systems.

- . . . might provide an effective mechanism for interfacing local work force, educational, and delivery system considerations with planning and associated activities of the National Physician Resources Commission and with regional, state and local commissions.
- All consortia would involve one or more medical schools to facilitate continuity in education.
- Existing sponsors of graduate medical education programs, especially hospitals, would be important participants in any consortium.
- Each consortium would develop its own governance arrangements in accord with local considerations.

American Osteopathic Association[15]

- The evaluation and approval of osteopathic postdoctoral training programs has recently been changed, and now focuses on the accreditation of "Osteopathic Postdoctoral Training Institutions" (OPTIs)—which function as graduate medical education consortia.
- The benefits realized from this new process will include the assessment of an institution's financial and philosophical ability to provide quality training programs, and the assurance to interns and residents of entering educationally and financially stable programs.
- An OPTI consists of one or more colleges of osteopathic or allopathic medicine (approved by the American Osteopathic Association or the Liaison Committee on Medical Education), one or more hospitals (approved by the American Osteopathic Association or the Joint Commission on Accreditation of Health Care Organizations), and non hospital ambulatory sites such as community health centers, medical group practices or managed care entities.
- The required partnership within an OPTI between the traditional hospital training site and the osteopathic medical school assures a necessary bond of clinical and didactic training.
- Each OPTI shall at a minimum offer an internship and two residency programs, at least one of which must be in primary care (family medicine, internal medicine, obstetrics and gynecology or pediatrics.
- The minimum number of approved and funded training positions in each of the OPTI's participating institutions' internship programs is four (4). The minimum number of approved and funded training positions in each of the OPT's participating institutions' residency programs is three (3).
- All institutions holding American Osteopathic Association postdoctoral training approval prior to implementation of OPTI accreditation must apply for accreditation as a new OPTI during a four year phase-in period, to be completed by 1999.

MMC/AAMC Survey of GME Consortia[16]

- Formal associations among one or more medical schools, teaching hospitals and other organizations involved in residency training developed to provide centralized support, direction and coordination for member institutions, so that they can function collectively.
- Consortia differ substantially from the affiliation agreements between hospitals and medical schools which imply no formal organization or collaboration beyond that stipulated by the agreement. Affilation documents are typically bilateral and negotiated independently by a medical school with each affiliate.
- Consortia also differ from Area Health Education Centers (AHECs).... AHECs have served in a number of instances as the bases for graduate medical consortia, but AHECs have a broader mandate. They have trained many types of health professionals and addressed health care delivery issues, primarily in underserved areas.

AAMC/CHP Survey of GME Consortia[17]

- Formal partnerships, involving two or more separate institutions involved in graduate medical education, formed to reorganize or strengthen medical education and characterized by shared and joint decision making.
- "Separate" was chosen in order to exclude organizations that might otherwise have met the definition, but which function as fully merged corporate entities. Although the education and/or workforce goals of such organizations may mirror those of graduate medical education consortia, their governance and operational unity distinquish them from consortia.
- "Shared and joint decision making" was chosen as the key governance element because

without it mutual trust, so important to the functioning of a multilateral organization, would be unlikely to flourish.

- "Joint decision making" was also utilized to help separate consortia from traditional affiliations. Affiliation agreements are usually organized by and around a single dominant entity, most often an academic medical center or major teaching hospital. Affiliated institutions may be part of a consortium, but an affiliation agreement in and off itself does not constitute a graduate medical education consortium if it lacks the joint decision making element.
- Consortia may be multidisciplinary in nature (i.e., include two or more medical specialties or disciplines) or involve only a single medical specialty or discipline (e.g., family practice, pediatrics, orthopedics, etc.).

Key Attributes

Any examination of the purpose of educational consortia must take into account at least three conceptually distinct, but operationally intertwined, elements: maintaining, and where necessary, enhancing the quality of medical education, especially graduate medical education ("educational enhancement"), generating and maintaining a well-balanced physician workforce ("workforce reform"), and improving management, and potentially reducing cost, by providing consistency across different training sites and sponsors and by providing an effective forum for dispute resolution ("improved administration"). The dynamic tension between these three core themes, when blended by the differing goals, alliances and constituencies of a particular organization's architect, should produce a dominant theme or purpose that is reflected in the mission, structure (governance and authority) and function (operations) of a consortium. These themes should also be evident in the consortium's educational programs and in its overall impact or achievements.

Whatever the specific goals and overall structure of a particular consortium, there is a common set of attributes that will influence its success as a vehicle within which a variety of partners with oftentimes disparate interests must function. Two recent surveys of graduate medical education consortia—conducted by the Association of American Medical Colleges in conjunction with the Maine Medical Center in 1993 (MMC/AAMC Survey)[16] and the Center for the Health Professions at the University of California, San Francisco in 1995 (AAMC/CHP Survey)[17]—have striven to define these attributes while describing the present status of educational consortia in the United States. The MMC/AAMC Survey included 36 functioning consortia that accounted for nearly 10% of all graduate medical education programs and 17% of all residents nationwide. The AAMC/CHP Survey included many of these consortia, but analysis was restricted to the 30 multidisciplinary, non-military consortia that made up two-thirds of the respondents—a database that is estimated to represent about 80% of such consortia operating in the United States in the latter half of 1995. The major findings that have emerged from these two surveys are summarized in succeeding sections.

TABLE 1 – Reasons for Convening Consortia

Improve member relations	81%
Inprove resident recruitment	75%
Improve teaching resources	64%
Curriculum design	61%
Centralize payroll, benefits, resources	61%
Integrate undergraduate & graduate education	58%
Facilitate accreditation	56%
Increase ambulatory experiences	56%
Increase physicians in underserved areas	50%
Increase generalist physicians	42%
Increase minority physicians	31%

Percentages of consortia choosing the reasons specifies.

Source: MMC/AAMC Survey[16]

TABLE 2 – Dominant Themes

Education, workforce & administration	23%
Education & workforce	20%
Education & administration	17%
Workforce & administration	3%
Education	23%
Workforce	3%
Administration	10%

Percentages of consortia giving the highest possible priority to one or more of three individual themes (see text for details).

Source: AAMC/CHP Survey[17]

MISSION & MEMBERSHIP

A wide variety of reasons are given for convening consortia, with dispute resolution, improving the recruitment of residents, and enhancing the content and administration of educational programs figuring most prominently (Table 1). However, no matter how laudatory, none of these individually can substitute for a collective vision centered around one or more of the dominant themes already described: educational enhancement, workforce reform and improved administration. Most consortia have varied missions. In the AAMC/CHP Survey, only about one-third of consortia reported a single priority, generally educational enhancement or improving administration (Table 2). In contrast, over two-thirds reported that they had multiple priorities—priorities that almost always included educational enhancement, however.

TABLE 3 – Educational Enhancement

Enhancing graduate medical education	93%
Enhancing undergraduate medical education	53%
Enhancing continuing medical education	53%
Educating other health care professionals	30%
Promoting interdisciplinary health care teams	30%

Percentages of consortia rating each potential mission element as a 4 or 5 on a scale of 1 (unimportant) to 5 (extremely important).

Source: AAMC/CHP Survey[17]

TABLE 4 – Membership

School of Nursing	23%
School of Dental Medicine	17%
School of Podiatric Medicine	0%
Allied Health Program	27%
Social Work Program	10%
Physician Assistant Program	30%
Public Health Center	20%
Community Practice	23%
Government Healthcare Planning Agency	10%
Private Health Planning Agency	7%
Health Maintenance Organization	20%
Employer Alliance	7%
Patient (consumer) Organization	7%

Percentages of consortia with members as specified.

Source: AAMC/CHP Survey[17]

TABLE 5 – Workforce Reform

Workforce Size & Composition	
Increase output of generalists	63%
Reduce output of subspecialists	30%
Limit overall number of physicians trained	30%
Workforce Diversity	
Improve gender balance	20%
Improve racial and ethnic diversity	33%
Workforce Distribution	
Increase practitioners in inner cities	40%
Increase practitioners in rural areas	27%
Research Workforce	
Increase basic biomedical investigators	3%
Increase clinical investigators	20%
Increase health services researchers	10%

Percentages of consortia rating each potential mission element as a 4 or 5 on a scale of 1 (unimportant) to 5 (extremely important).

Source: AAMC/CHP Survey[17]

Although the vast majority of consortia consider enhancing the quality of graduate medical education an important part of their mission,[16,17] they have considerably less interest in undergraduate or continuing medical education (Table 3). Nonetheless, virtually all currently active consortia include at least one medical school, and several have multiple medical schools.[16,17] As of late 1995, at least 32 different allopathic schools (25% of the allopathic schools in the United States) and two osteopathic schools were involved in multidisciplinary graduate medical education consortia.[17]

Relatively few consortia actively participate in the training of non-physician health care professionals (Table 3). This is hardly surprising given the paucity of non-physician schools or training programs in consortia (Table 4). Likewise, relatively few consortia include public health centers, community practices, and health care planning agencies as members.

Education and workforce goals are not always clearly delineated by consortia. As many as one-third of consortia responding to the AAMC/CHP Survey did not have formal vision/mission statements, and where such statements existed important elements were sometimes missing.[17] For example, although about three-quarters of these statements explicitly recognized the importance of community-based education, only about half noted the importance of the scientific basis of medical practice, and only a minority included comments on aligning health care provider output with health care needs or matching practice skills with the needs of the delivery system.

In contrast to the strong emphasis on enhancing education, fewer consortia consider workforce reform an important objective (Tables 1 & 5). In the AAMC/CHP Survey, although increasing the output of generalists was generally viewed favorably, there was considerably less interest in reducing subspecialist output, and few consortia displayed enthusiasm for limiting the overall number of physicians trained (Table 5).

Likewise, although certain individual consortia may have felt differently, for the most part consortia manifested only limited interest in improving either the diversity or geographic distribution of the physician workforce (Table 5). They also expressed little interest in restructuring the research workforce, an indifference that included not only basic biomedical research but clinical investigation and health services research as well (Table 5).

GOVERNANCE & AUTHORITY

Less than half of the consortia responding to the MMC/AAMC Survey had governing boards that set policy. In the AAMC/CHP Survey (Table 6), about half of the consortia were legally incorporated, functioning with a board of directors and formal by-laws; the remainder were either governed by an institutional agreement, which included a formal memorandum of understanding and a joint oversight committee or structured as informal cooperative ventures, consensus driven and organized around a common working group. Despite such structural differences, many consortia appear to function democratically, with equal representation and input by all members, rather than being directed by a medical school or teaching hospital (Table 7).

Although many consortia have policy-setting governing boards of one type or another, they vary greatly in their scope of authority, relatively few having formal, written policies defining such important operational issues as the management of graduate medical education revenues and expenditures, negotiating rights, dispute resolution and member sanctions.[17] In contrast, a majority of consortia do have formal policies regarding such basic issues as changes in governance, voting rights, admission of new members and graduate medical education program sponsorship.[17]

In the MMC/AAMC Survey, only slightly more than half of the consortia had authority to allocate resources; in the remainder, individual members acted just as they would have in the absence of a consortial relationship. Moreover, those consortia that did allocate resources usually did so by determining numbers of residency positions rather than by providing financial support for residents or faculty.

In the AAMC/CHP Survey,[17,18] the majority of consortia felt that they had sufficient authority to enhance education, including authority to set educational standards and evaluate training program quality (standards & quality evaluation) and authority to distribute residency positions between competing programs in the same discipline (GME sponsorship–education) (Table 8).

However, authority to effect changes in the physician workforce was more varied. The majority of consortia felt that they had authority to allocate residency positions between different disciplines (GME sponsorship–workforce), but a distinct minority reported having authority to give preference to applicants who planned careers as generalists (generalist preference) or who planned to practice in medically underserved areas (practice location preference) (Table 8).

TABLE 6 – Structure

Legally incorporated	53%
Institutional agreement	37%
Informal cooperative venture	10%

Percentages of consortia with the structure specified.

Source: AAMC/CHP Survey[17]

TABLE 7 – Function

Equal and democratic	72%	45%
Medical school directed	21%	37%
Hospital directed	7%	18%

Percentages of consortia functioning in the manner specified (AAMC/CHP Survey—left column; MMC/AAMC Survey—right column).

Source: MMC/AAMC & AAMC/CHP Survey[16,17]

TABLE 8 – Authority

Educational Authority	
Standards & quality evaluation	67%
GME sponsorship—education	70%
Workforce Authority	
GME sponsorship—workforce	73%
Generalist preference	30%
Practice location preference	13%

Percentages of consortia with authority as specified (see text for definitions).

Source: AAMC/CHP Survey[17,18]

ADMINISTRATION & MANAGEMENT

Having authority is one thing, but translating it into operational control may be quite another. This is perhaps best illustrated by considering graduate medical education program sponsorship. Ideally, one might expect a single official sponsor, the consortium itself, in each discipline ("official" being defined in terms of recognition by the appropriate accrediting body). However, less than half of the consortia responding to the AAMC/CHP Survey reported that they officially sponsored all the programs operating within their member institutions (Table 9).

One might also expect to find a single, integrated program in each discipline or specialty represented in the consortium ("integrated" being defined as a single, unified program in a particular discipline with residents rotating through member

institutions, as appropriate). If nothing else, this would obviate the need for distributing residents among competing programs of variable quality. However, only about one-third of the consortia responding to the AAMC/CHP Survey had integrated graduate education programs in all specialties or disciplines represented, and several consortia had no integrated programs at all (Table 9).

Governance and authority are also reflected in fiscal operations. Not surprisingly, the vast majority of consortia maintain individual hospital-based accounts for Medicare direct graduate medical education payments (trainee salaries/benefits, supervising faculty salaries/benefits, and allocated overhead).[17] Perhaps more pertinent, however, is whether a consortium, rather than its individual members, controls the disbursement of residency training funds. Interestingly, fully half of the consortia responding to the AAMC/CHP Survey reported that residents' salaries and benefits were controlled by the consortium as a whole.[17]

Aside from the Medicare and Medicaid programs, many consortia also receive funding from other sources, including a variety of Title VII programs, the Department of Veterans Affairs, state and local government appropriations and grants, and private foundations.[16,17] In a number of consortia support is also derived from member contributions or taxes,[17] and one can reasonably assume that graduate education payments from private insurers are involved as well.

Exactly how all these revenue streams are treated is unknown, but costs are not always equitably distributed. For example, only about half of the consortia responding to the AAMC/CHP Survey reported that overall costs (defined as *all* the costs of doing business—operating costs, capital investment, debt service, and so on) were proportionally shared by all members of the consortium (Table 10). In contrast, less than one-quarter of the consortia in the earlier MMC/AAMC Survey reported proportional cost sharing. Whether the difference in the two studies is sample related, reflects differences in the way financing was dealt with in the two questionnaires, or represents a real change over time is unclear.

For reasons of efficiency alone, one might expect consortia to have common, centralized administrative and management systems covering such areas as resident recruitment (advertising, application procedures, selection standards, and the like), financial policies (salaries, financial counseling, loans, loan deferment, and the like), personnel policies (benefits, work hours, moonlighting, grievance procedures, and the like) and scheduling policies and procedures. For quality as well as administrative reasons, one might also expect common standards, policies and procedures for resident supervision and evaluation, and perhaps for the evaluation of supervising faculty as well. Given the importance and complexity of program accreditation, the overall evaluation of graduate medical education program quality might also be expected to be an undertaking of the consortium as a whole. However, the available information does not support the widespread adoption of common administrative procedures by consortia (Table 11).

TABLE 9 – GME Program Organization

GME Program Sponsorship		
Consortium sponsors—all	41%	NA
Consortium sponsors—some	31%	NA
Consortium sponsors—none	28%	NA
GME Program Integration		
All integrated	37%	40%
Some Integrated	53%	40%
None integrated	10%	20%

Percentages of consortia with GME programs organized as specified (AAMC/CHP Survey—left column; MMC/AAMC Survey—right column). NA = not available; GME = graduate medical education

Source: MMC/AAMC & AAMC/CHP Survey[16,17]

TABLE 10 – Finances

Proportional sharing of costs	52%	18%
Underwritten by teaching hospital(s)	35%	42%
Underwritten by medical schoos(s)	3%	10%
Special appropriations or grants	10%	30%

Percentages of consortia characterizing cost apportionment in the manner specified (AAMC/CHP Survey—left column; MMC/AAMC Survey—right column).

Source: MMC/AAMC & AAMC/CHP Survey[16,17]

TABLE 11 – Administration and Management

Resident recruitment	40%
Financial & personnel policies	53%
Resident supervision & evaluation	23%
Faculty evaluation	33%
Graduate medical education program quality	53%
Interface with outside organizations	53%
Educational resource management	20%

Percentages of consortia with common, centralized management in the areas specified.

Source: AAMC/CHP Survey[17]

MEDICAL EDUCATION

Consortia should not be expected to reinvent the entire process of medical education or even to assume all the responsibilities of their individual members. Nor would it be productive for consortia to deal with discipline-specific competencies. Instead they should function as umbrellas under which medical education is reorganized and as guardians of the educational environment, ensuring appropriate emphasis of those aspects of medical education that should be common in the training of all physicians no matter their particular specialty or ultimate mode of practice.

Six broad areas—training program orientation, clinical resources, teaching resources, role models & mentors, curriculum, and evaluation & assessment—were assessed in the AAMC/CHP Survey.[17] In each area, consortia were asked to consider whether the consortium as a whole, as opposed to any of its individual members, had addressed a series of from 7 to 10 specific educational elements. Respondents were told that, at a minimum, "addressed" implied the existence of a well-defined plan to bring the issue to closure, but that complete resolution need not be considered a prerequisite for a positive response.

Program Orientation

To assess the "balance" between education and service, the following issues were examined: resident caseloads and work hours, career and personal counseling opportunities, presence of computerized medical information systems (laboratory and radiology reports, and so on), availability of ancillary clinical (nurse specialists, physician assistants, and the like), technical (phlebotomists, respiratory therapists, and the like) and clerical support, and resident transportation between training sites. With the exception of work hours, personal counseling and computerized information systems, many consortia have yet to address these issues.[17]

Clinical Resources

Numbers and types of ambulatory and hospitalized patients, patient diversity (gender, ethnic, cultural), practice diversity (modes of practice, delivery models, and so on), community-based training sites, extended care training sites (nursing homes, rehbilitation facilities, and the like), and the ease of clinical information transfer between training sites (availability of computer networks, and so on) were all considered. With the exception of community-based training sites and practice diversity, two issues of special importance in the new training environment, most consortia have yet to address these issues.[17]

Teaching Resources

The evaluation of teaching resources included: training both residents and faculty to be effective teachers and supervisors, structured learning programs (case-based teaching, simulated patients, and the like), computer-based teaching (interactive programs, telemedicine, and so on), medical reference systems (medline, virtual libraries, and so on), the development of a critical mass of clinician educators, the nurturing of community-based faculty, and administrative support for educational programs. It is noteworthy that a substantial majority of consortia have addressed the need to provide appropriate administrative support to their educational programs, and a majority have also dealt with faculty training and computerized medical reference systems.[17] However, most have yet to address the remaining issues.[17]

Role Models & Mentors

This category included an assessment of the availability of role models and mentors with expertise in: primary care practice, practice in medically-underserved areas, and research (clinical investigation, behavioral research, health services research, and so on). The need for a gender and racially diverse faculty was also evaluated. With the notable exception of primary care practice, most consortia have yet to deal directly with these issues.[17]

Curriculum

Only curriculum elements that could be applied broadly, across all specialties, were chosen for scrutiny: medical ethics; informatics (information evaluation and management); public health (health maintenence, nutrition, disease prevention, and the like); epidemiology; decision analysis and clinical effectiveness (outcomes) research methodology; technology assessment and utilization; clinical protocols, outcomes tracking and physician performance review; insurance, managed care and capitation economics; health care law and risk management; and clinical practice management. With the exception of medical ethics and informatics, most consortia have yet to address these issues.[17]

Evaluation & Assessment

Consortia might be expected to review applicant and matriculant quality, and to maintain records of the practice choices and locations of their graduates. They should oversee policies and procedures for evaluating traineee performance, and set generic guidelines for the assessment of the attitudes and behavior, knowledge, and analytical and procedural skills of their trainees. They should also oversee the policies and procedures for evaluating supervising faculty performance. However, with the exception of policies and procedures for evaluating trainee performance, most have yet to deal with these issues.[17]

Summary

Relatively few consortia appear to have dealt with medical education in a comprehensive fashion. In none of the six general areas examined, for example, had a majority of the consortia that responded to the AAMC/CHP Survey addressed all the specified elements (Table 12). Perhaps even more striking is the number of consortia that had not addressed any of these elements (Table 12).

Table 12 – Medical Education

	All	*None*	*N*
Program Orientation	10%	10%	9%
Clinical Resources	17%	27%	7%
Teaching Resources	13%	13%	10%
Role Models & Mentors	3%	33%	9%
Curriculum	10%	20%	10%
Evaluation & Assessment	13%	30%	8%

Percentages of consortia that had addressed all or none of the elements in each of the six areas specified (see text). N = number of individual elements in each area.

Source: AAMC/CHP Survey[17]

Outcome Measures

Measuring the success of any organization ultimately requires objective standards by which performance can be judged. Although external standards will generally be more rigorous, internal standards should not be neglected. Indeed, ongoing self study has become a widely accepted mechanism for quality improvement. In the final analysis, consortia, no less than any other educational organization, will be held to the same expectations. The evaluation of accomplishments is important for any organization, but especially so when that organization is part of a relatively small group being promoted as a new model of medical education.

Given that evaluation is necessary, it must be recognized that a temporal element is involved as well. New organizations require time to register significant accomplishments, especially when trying to change ingrained patterns of behavior, and even well established organizations evolve over time. Multilateral organizations with oftentimes disparate interests like consortia are likely to evolve slowly, with a pace set by blossoming trust and mutual interdependence. In evaluating the achievements of consortia it is also well to keep in mind that there are at least three standards against which consortia could be judged: against the expectations of consortium advocates, against their own priorities, and against potential competitors such as integrated health systems.

Sufficient information is now available to begin to compare the performance of consortia against their own priorities as well as against the expectations of advocates and policy makers.[16,17] How consortia and integrated health systems compare as educational vehicles is an issue that is likely to assume increasing importance in the near future, as both increase in numbers and influence. However, no information is available to provide the basis for such a comparison at the present time.

Whatever the particular methodology employed in evaluating the achievements of consortia, attention should be given to all three broad areas defined earlier: educational enhancement, workforce reform and improved administration (including both working relations and organizational efficiency to support educational programs).

TABLE 13 – Achievements: Educational Enhancement

	AAMC/CHP Survey	MMC/AAMC Survey
Trainee Attributes		
Medical professionalism	56%	NA
Scientific literacy	63%	NA
Life long learning	53%	NA
Trainee Skills		
Generalist Practice skills	58%	NA
Subspecialist practice skills	29%	NA
Interdisciplinary practice skills	50%	NA
Managed care practice skills	35%	NA
Health services research skills	53%	NA
Clinical research skills	68%	NA
Basic biomedical research skills	35%	NA
Educational skills	63%	NA
Educational Experiences		
Ambulatory experiences	NA	58%
Continuity of care experiences	68%	NA
Community-based education	60%	NA
Educational Environment		
Curriculum design	63%	61%
Quality of resident applicant pool	50%	64%
Appropriate role models & mentors	60%	NA
Research environment	63%	NA
Overall Educational Outcome		
Graduate medical education	90%	NA
GME training program accreditation	85%	61%
Undergraduate medical education	80%	NA
Continuing medical education	60%	NA
Other health care professionals	35%	NA

Percentages of consortia reporting improvement in the areas specified. AAMC/CHP Survey—left column: data from consortia in operation for at least two years. MMC/AAMC Survey—right column: data from all consortia responding to the survey. NA = not available; GME = graduate medical education

Source: MMC/AAMC & AAMC/CHP Surveys[16,17]

EDUCATIONAL ENHANCEMENT

Most consortia are very positive about their impact on the overall quality of local educational programs, including both graduate and undergraduate medical education, and many report significant advances when queried about a wide variety of specific aspects of education as well (Table 13). The majority of consortia responding to the AAMC/CHP Survey reported improvements in generalist

practice skills, ambulatory and continuity of care experiences, and community-based education. However, many consortia appear to fall short in other areas relevant to clinical practice in the modern health care market place, perhaps most notably in the promotion of interdisciplinary and managed care practice skills (Table 13).

TABLE 14 – Achievements: Workforce Reform

Size		
All physician	45%†, 22%§	NA
Composition		
Generalists	50%†, 56%§	31%
Subspecialists	28%†, 0%§	NA
Diversity		
Females	53%†	NA
Minorities	50%†	28%
Distribution		
All underserved areas	NA	31%
Rural areas	37%†	NA
Inner cities	33%†	NA
Research Workforce		
Health services researchers	20%†	NA
Clinical investigators	35%†	NA
Basic biomedical researchers	17%†	NA

Percentages of consortia reporting increases in the production of physicians of the types specified. AAMC/CHP Survey—left column: †consortia in operation for at least two years. §consortia in operation for less than two years. MMC/AAMC Survey—right column. NA = not available.

Source: MMC/AAMC & AAMC/CHP Surveys[16,17]

Table 15 – Achievements: Improved Administration
Working Relations

Internal Relations	
Teaching hospitals	95%
Medical school(s) and hospitals	90%
External Relations	
Community physicians†	53%†, 67%§
GME program sponsors/payers	72%
Regulatory agencies	43%
Managed care organizations	15%

Percentages of consortia in operation for at least two years reporting improved relations among members (internal relations) or with other individuals or organizations (external relations).
† Between community physicians and teaching hospitals.
§ Between community physicians and medical school(s).
GME = graduate medical education

Source: AAMC/CHP Survey[17]

WORKFORCE REFORM

Physician output should be assessed in terms of national physician workforce goals and priorities, with the size, composition, diversity and geographic distribution of the workforce all being kept in mind. In the MMC/AAMC Survey, less than one-third of consortia reported increasing the ouput of generalists (Table 14). Somewhat more extensive information is available from the AAMC/CHP Survey, but here too only modest success in most areas of physician workforce restructuring was evident (Table 14).

Nonetheless, it may be noteworthy, that whereas close to a majority of the consortia in operation for at least two years at the time of the AAMC/CHP Survey reported an increased output of physicians, only about one-quarter in operation for less than two years reported increasing the number of their graduates. With about half of the consortia in each group reporting increased production of generalists, much of the increased output can be accounted for by generalists. However, 28% of the more established consortia also increased their production of subspecialists; in contrast, none of the newer consortia reported increasing the output of subspecialists.

Whether these differences are the result of marketplace forces alone, or of conscious decisions on the part of consortia organized during the time of the recent health care reform debate, is unclear. Likewise, it is too early to tell whether these changes simply mirror those that appear to be beginning within the larger academic community,[19] or whether consortia as a group are outperforming their more traditional counterparts.

IMPROVED ADMINISTRATION

In general, consortia are quite positive about their ability to improve working relations. In the MMC/AAMC Survey, 81% of the responding consortia reported improved collaboration between the "university and the community" and "dispute resolution" was noted to have been improved by 61% of consortia.[16] Similar results are evident in the AAMC/CHP Survey, in which a more detailed series of questions—covering both internal and external relations—was posed (Table 15). Almost all consortia reported improved internal working relations. However, external relations were less consistently improved. Interestingly, very few consortia

reported improved working relations with managed care organizations.

For the most part, consortia are also very enthusiastic about their ability to enhance organizational efficiency (Table 16). Perhaps most impressive is the perceived reduction in the overall cost of graduate medical education administration, reported by a solid majority of consortia in the AAMC/CHP Survey.

The broader achievements reported in the AAMC/CHP Survey, as compared to those in the MMC/AAMC Survey, may represent sample differences or be due to the fact that no adjustments were made in the earlier study for the time that the consortia had been in operation. When the AAMC/CHP data are recalculated using all consortia, rather than just those in existence for longer than two years, the percentage reporting reduced costs decreases by approximately 10%. Indeed, achievements in all areas—including the coordination of residents' salaries and benefits and the coordination of undergraduate and graduate education—are reduced when more recently formed consortia are included in the analysis.

TABLE 16 – Achievements: Improved Administration
Organizational Efficiency

Coordination of salaries & benefits	84%, 79%†	61%
Resident recruitment	68%	NA
Resident supervision	68%	NA
Resident evaluation	74%	NA
Supervising faculty evaluation	65%	NA
Training program evaluation	90%	NA
Coordination of UME & GME	80%	58%
Training site development	74%	NA
Accounting of GME funds	80%	NA
Costs of GME program administration	60%, 55%§	36%

Percentages of consortia reporting improved organizational efficiency. AAMC/CHP Survey—left column: data from consortia in operation for at least two years. MMC/AAMC Survey—right column: data from all responding consortia.
† Salaries and benefits, respectively.
§ Derived from the responses to two separate questions.
UME, GME = undergraduate and graduate medical education, respectively

Source: MMC/AAMC & AAMC/CHP Surveys

Confounding Influences

Although educational enhancement, workforce reform and improved administration are the central forces that would be expected to drive the development and operations of an educational consortium, other potent (and potentially confounding) influences may shape consortia. Not surprisingly, market competition and financial constraints were issues of special concern (Table 17).

MARKET COMPETITION

The market forces catalyzing the development of integrated health care systems may distort underlying educational or workforce goals and objectives. Thus, although not an independent driving force, the concurrent formation or expansion of an integrated health care delivery system may be a powerful modifying influence on consortium development and operations. Indeed, given seemingly ever increasing competitive forces, some have questioned whether an educational network that crosses the boundaries of a single delivery system would be viable.[20] This has relevance not only to the implementation of consortia but also to the issue of medical school control—especially when one considers the dichotomy between the concept of school control and the reality of today's medical schools, which are becoming increasingly intermeshed with delivery systems.[21]

In organizing a consortium, therefore, careful consideration should be given to how the educational mission will interface with the particular health care delivery system (or systems) involved. This will be particularly important when overlapping, and therefore competive, delivery systems form the operational matrix of the consortium, the key question being how will a common educational mission interface with the different health care delivery systems involved?

TABLE 17 – Major Barriers to Success

Market competition	47%
Financial constraints	47%
Diverse & unclear objectives	33%
Mistrust	31%
Insufficient commitment	28%

Percentages of consortia identifying various issues as major barriers to success.

Source: MMC/AAMC Survey[16]

Confirming the complexity of educating physicians in the current environment, more than three-quarters of the consortia responding to the AAMC/CHP Survey reported that their educational mission crossed independent and competing health care delivery systems.[17] Despite this, only about one-third of these consortia felt that competition for patients had influenced the membership, structure or function of the consortium. Thus, consortia may be a viable mechanism for reorganizing education even in an era of increasing market place competition. Whether forces favoring cooperation in education versus competition in patient care delivery will be appropriately balanced in the future remains to be seen. How to foster collaboration in education in a competitive health care environment has become one of the central questions of the time, and it is often with this in mind that policy makers turn to educational consortia as one potential answer.

FINANCIAL CONSTRAINTS

GRADUATE MEDICAL EDUCATION FUNDING

Graduate medical education is currently financed from a variety of sources, including Medicare, Medicaid, private insurers, and faculty practice plans, amongst others.[22] However, with the exception of Medicare (and certain Medicaid programs), it has been difficult to quantitate the precise magnitude of such support. Because of this, as well as to provide a reliable and equitable financing system, medical educators (and some policy makers) are pressing for the establishment of a "shared responsibility" or "all-payer" fund for graduate medical education.[23]

Most recently, an all-payer fund was explicitly supported in a Consensus Statement on the Physician Workforce jointly released by the Association of American Medical Colleges, the American Association of Colleges of Osteopathic Medicine, the American Medical Association, the American Osteopathic Association, the Association of Academic Health Centers, and the National Medical Association: "A national all-payer fund should be established to provide a stable source of funding for the direct costs of graduate medical education (resident stipends and benefits, faculty supervision and program administration, and allowable institutional costs)".[24]

By ensuring a broad involvement of state and private sector medical insurance systems, together with Medicare, "shared responsibility" financing of graduate medical education would greatly facilitate consortium development, and COGME strongly supports such an approach. However, it should be recognized that a substantive role for consortia in education and workforce reform is not dependent on the availability of a common pool of graduate medical education monies. Nor is it dependent on the enactment of pending legislation regarding the establishment of specially designated trust funds for undergraduate and graduate medical education.[25]

The designation of consortia as recipients of Medicare graduate medical education payments has long been a goal of the National Council on Graduate Medical Education[26] and this concept was also supported in the recent Consensus Statement on the Physician Workforce: "Payments should be made from this [all-payer] fund to entities that incur the costs of graduate medical education, whether they be hospital-based or not, or to other entities, such as consortia, that have been designated to receive funds on behalf of the entities incurring the costs".[24]

Ideally, such disbursement should not only include Medicare direct graduate medical education payments, but funds equivalent in purpose to Medicare indirect graduate medical education payments as well. The latter provide compensation to teaching hospitals for the additional inpatient costs incurred for ". . . the specialized services and treatment programs provided by teaching institutions and the *additional costs associated with the teaching of residents*" (emhasis added).[27] These "additional costs" are generally recognized to include operational costs (lower staff productivity, additional diagnostic tests, and so on) that are intrinsic to the educational environment. Unlike "direct" costs, which are more easily quantitated, "indirect" costs are subsumed in overall patient care costs, can only be estimated, and are an integral part of the Medicare Prospective Payment System.

As presently formulated, Medicare indirect graduate medical education payments contribute substantially to teaching hospitals' aggregate total margin and have a vital role in maintaining the financial viability of teaching hospitals.[28] However, "additional costs" are not restricted to the inpatient environment. They arise in the ambulatory care arena, be it hospital clinic or community physician office, as well. As such, they are as worthy of support as inpatient educational costs, especially as the proportion of medical education conducted outside of hospitals (so-called community-based education) increases. How this is to be achieved is of increasing concern to medical educators and policy makers alike.

Financing Community-Based Education

The financing of community-based education is particularly troublesome because of statutory limitations on the direct flow of Medicare graduate medical education payments to health care delivery sites other than hospitals and fiscal disincentives that limit the ability of hospitals to channel Medicare graduate medical education payments to community-based ambulatory care sites.[22,29] The capital costs of developing non-traditional educational sites and the negative impact of education on clinical productivity in the ambulatory environment raise similar concerns.[30] Mechanisms—acceptable to policy makers and medical educators alike—that would resolve all these difficulties have yet to be identified, but both statutory relief and fiscal incentives for academic medical centers to shift appropriate educational costs out of the inpatient and into the ambulatory environment will be needed.

As residents move to non-hospital training sites, the "additional costs" born by hospitals should decline. This should allow the transfer of an appropriate portion of Medicare indirect graduate medical education payments to consortia, with subsequent flow of these monies to the non-hospital entities actually incurring the costs of ambulatory care education. Without some mechanism of this sort, it is difficult to envisage how the substantial cost of education in the ambulatory environment could be addressed.

Service Needs of Academic Medical Centers

The financial implications of the interdependence of graduate medical education training and service delivery were cited as one of the single most important issues currently facing consortia.[16,17] The clinical and ancillary service needs of academic medical centers are potentially powerful modifiers of medical education.[31] Hospitals, even teaching hospitals, must have as their primary purpose patient care. Moreover, residents relieve faculty of some routine patient care responsibilities, function as faculty surrogates in clinical undergraduate medical education, provide much of the uncompensated care for the indigent, and despite recent improvements still assume significant ancillary service obligations on behalf of their training programs.

If an appropriate balance between education and clinical service is to be established other funds and other providers to support these activities will have to be identified. Whether and how such "replacement" resources will be secured is by no means clear, but the success or failure of this endeavor will have a powerful modifying influence on graduate medical education. Actual and projected reductions in Medicare funding for medical education and the flow of Medicare graduate medical education payments away from hospitals to managed care organizations not engaged in teaching,[28] only exacerbate this problem. How policy makers adapt to these fiscal realities will greatly influence the character, especially the educational character, of consortia.

Strengths & Weaknesses

Virtually all consortia have a strong commitment to enhancing education, particularly graduate medical education (Tables 1-3). Given that they are the natural guardians of educational quality, it is not surprising that almost all consortia include schools of allopathic or osteopathic medicine. Some in the medical education community have argued that medical schools or large academic medical centers would inevitably dominate consortia, but many consortia appear to function democratically (Table 7). Even the fact that graduate medical education payments presently flow almost exclusively to hospitals does not seem to have led to undue influence by teaching hospitals within most educational consortia (Table 7).

Whereas the vast majority of consortia consider improving the quality of graduate medical education a primary priority, fewer have paid attention to undergraduate and continuing medical education (Table 3). Many consortia have yet to explicitly recognize—at least by incorporating a philosophy and appropriate language into their mission statements—that medical education is best dealt with as a continuum, and that the entire professional lifetime of the physician is the appropriate frame of reference rather than a particular, and essentially arbitrary, period of training or practice.[32]

Despite a strong commitment to enhancing education, relatively few consortia appear to have dealt with medical education in a truly comprehensive fashion (Table 12). Of course, it could be argued that some of the important issues not addressed by consortia themselves may have been dealt with by one or more of their individual members. However, given the Accreditation Council for Graduate Medical Education's institutional requirements for allopathic residency training programs[33] and the American Osteopathic Association's Council on Postdoctoral Training requirements for osteopathic training institutions,[15] to be accredited and serve as an official sponsor of graduate medical education programs any organization—consortium or otherwise—must accept full and complete responsibility for medical education. Consequently, if consortia are to emerge as a new model for medical education, they will have to give appropriate attention to both the process of education and the environment in which it takes place.

Although most consortia are very positive about their overall impact on the quality of educational programs and many report progress in certain areas (e.g., improving generalist skills, ambulatory and continuity of care experiences and community-based education), many consortia have yet to deal with other areas of equal significance (e.g., enhancing interdisciplinary and managed care practice skills) (Table 13). Given the increasing importance of interdisciplinary approaches to health care delivery and the practice needs of the modern health care market place, these are deficiencies that warrant both wider recognition and appropriate attention. Moreover, despite the emerging consensus that public health and community-based medicine should assume more prominent roles in the medical curriculum, relatively few consortia include public health centers, community practices, or health care planning agencies (Table 4). Nor, for the most part, do consortia include non-physician schools or programs or managed care organizations (Table 4).

Consortia are governed in a wide variety of different ways (Table 6). Given such variety, it is pertinent to inquire how authority is translated into operations. Policy makers have envisaged considerable power for consortia, and effective reform certainly requires appropriate authority. How the various elements of a consortium's operations are structured and managed provides insight not only into operational efficiency but, more importantly, into how intimately power has been merged, how equitably resources are shared, and whether the consortium has the authority required to meet the expectations of policy makers or even to achieve its own objectives.

Graduate medical education sponsorship and fiscal authority are perhaps the two most important measures of the administrative cohesiveness of an educational consortium, and as such are likely to be critical arbiters of the ability of a consortium to advance medical education and reform the physician workforce as well. Many consortia report that they have authority to set educational standards and evaluate the quality of educational programs, and many claim to have sufficient control over residency positions to direct (or redirect) education (Table 8). However, this authority may well be more apparent than real: Relatively few consortia officially sponsor graduate medical education programs or have fully integrated training programs (Table 9). As one might expect, administrative and management efficiencies are achieved more commonly in consortia that function as a single, centralized sponsor

of graduate medical education programs as opposed to consortia in which individual members retain control of their own programs (Figure 1).[18]

The scope and nature of the financial authority that the membership cedes to the consortium as a whole is a critical arbiter of power, and is likely a strong determinant of administrative success. Given present methodologies for calculating Medicare direct and indirect graduate medical education support, which obstruct rather than facilitate the flow of graduate medical education payments to consortia and community-based training sites,[29] it is not surprising that the vast majority of hospital members of present day consortia maintain separate graduate medical education revenue accounts.[17] Nonetheless, a number of consortia do have some measure of fiscal authority—about half of the consortia responding to the AAMC/CHP Survey reporting, for example, that Medicare direct graduate medical education payments are controlled by the consortium rather than by individual members.[17] Importantly, consortia with such authority report administrative and management efficiencies much more commonly than those in which graduate medical education payments are controlled by individual members (Figure 2).[18] Without the more widespread adoption of common financial planning or systems it is difficult to see how consortia, as a group, will have access to the resources nescessary to truly reform medical education.

About half of the consortia responding to the AAMC/CHP survey also reported proportional sharing of the overall costs of consortium development and operation (Table 10). However, there is not a simple relationship between fiscal authority (measured as control of resident's salaries and benefits) and cost allocation. For example, of the consortia that had fiscal authority, only 71% distributed costs equitably across the entire membership. Still, this is significantly greater than the number of consortia in which fiscal authority rested with individual members: only 33% of this group reported proportional cost distribution ($p<0.05$; chi-square test of association).[17] Thus, in this area at least, partnership equity does seem to follow the provision of appropriate authority.

Although policy makers envision an important role for consortia in restructuring the physician workforce, not all consortia have missions that include workforce reform (Tables 1 & 5). The importance of mission delineation is graphically illustrated by data from the AAMC/CHP Survey: Perhaps not surprisingly, consortia that espouse physician workforce reform more commonly report enhancement of generalist practice skills and increased production of generalists than consortia in which workforce reform is not a primary priority (Figure 3).[18]

Unfortunately, only about half of the multidisciplinary consortia surveyed considered improving the composition, diversity or distribution of the physician workforce a primary priority (Table 2), and even those that did may have had workforce priorities that were misdirected or internally inconsistent. For example, very few consortia displayed enthusiasm for limiting the overall number of physicians entering the workforce, and whereas many considered training generalists an important goal, far fewer rated reducing subspecialty training as important (Table 5).

Present day consortia also have limited authority and responsibility to restructure the physician

FIGURE 1

Consortia were asked to rate their performance in reducing the costs of graduate medical education (GME) program administration (PgmCost; n=29) and improving overall program management (PgmMan; n=28). [Included in PgmMan are assessments of the administration and accounting of GME funds, coordination of residents' salaries & benefits, standardization of residents' workhours, training site development, and the interfaces with program sponsors/payers and accrediting & licensing bodies.] Achievements in both areas were significantly more common in consortia that functioned as the official sponsor of all GME programs within member institutions (Consortium) as opposed to those consortia which sponsored only some or none (Members); $p<0.01$, chi squared test of association.

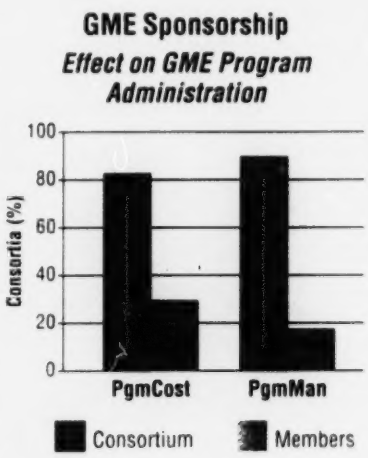


FIGURE 2

Consortia were asked to rate their performance in reducing the costs of graduate medical education (GME) program administration (PgmCost; n=30) and improving overall program management (PgmMan; n=29). [For definition of PgmMan, see Figure 1.] Achievements in both areas were significantly more common in consortia that controlled Medicare direct graduate medical education payments (Consortium) than in those in which such control resided with individual members (Members); $p<0.05$, chi squared test of association.

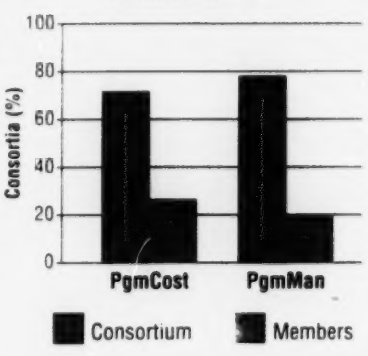
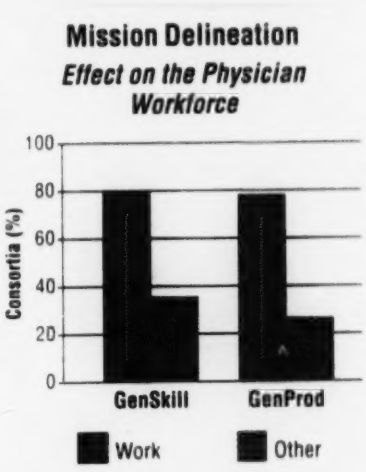


FIGURE 3

Consortia were asked to rate their performance in enhancing generalist practice skills (Gen Skill; n=29) and increasing the production of generalists (GenProd; n=29). Achievements in both areas were significantly more common in consortia with a mission that included workforce reform (Work) as a primary priority than in those that did not (Other); p<0.05, chi squared test of association.



workforce. Although many report that they have authority to allocate residents between different disciplines or specialties (Table 8), as noted previously relatively few consortia really control residency positions. Moreover, very few consortia have authority to take future career plans into account when selecting residents (Table 8). It is hardly surprising, then, that although the production of generalists by consortia has increased, at least until recently so has the output of subspecialists (Table 14). As yet, there is no evidence that consortia have begun to adjust to the primary care needs of the health care market place any differently than the remainder of the academic community.[19] Nor have consortia, as a group, instituted changes that would be expected to influence the distribution or diversity of the physician workforce (Table 14). For the most part, therefore, at present the workforce effects of consortia seem to mirror those of the wider academic community.

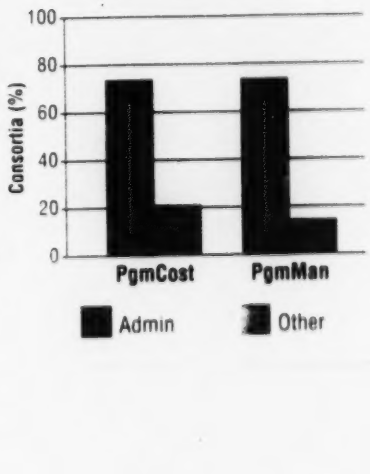
Workforce reform should not end with considerations of the clinical workforce alone. Although primary care practitioners may be in short supply, there is evidence that clinical investigators and health service researchers are as well—so much so that some have questioned the nation's ability to translate biomedical research into effective (and cost effective) therapy.[34] However, consortia display little interest in improving the research workforce (Table 5), and with the possible exception of clinical research skills most consortia do not report improvements in research training (Table 14). Such attitudes may relegate consortia to a rather constrained, unidimensional educational terrain rather than positioning them in the academic mainstream or at the forefront of educational reform.

Policy makers also envision an important role for consortia in improving the administration and management of educational programs, and this is precisely the area in which consortia have been most successful to date (Tables 15 & 16). Perhaps not surprisingly, organizational efficiencies are achieved more commonly in consortia that consider improving the administration of educational programs an important part of their mission than in consortia in which administrative simplication and cost control are not viewed as mission priorties (Figure 4).[18]

Consequently, it is of concern that only about half of the multidisciplinary consortia responding to the AAMC/CHP Survey considered improving the administration and management of medical education a primary priority (Table 2), and that relatively few had set explicit management objectives.[17] Effective management, elimination of duplicative services and economies of scale are essential in an era in which the stability of medical education funding is in doubt. Moreover, it is unrealistic to expect education and workforce reform to flourish in the absence of an effective administrative infrastructure.

FIGURE 4

Consortia were asked to rate their performance in reducing the costs of graduate medical education (GME) program administration (PgmCost; n=30) and improving overall program management (PgmMan; n=29). Achievements in both areas were significantly more common in consortia with a mission that included improving the administration of educational programs (Admin) as a primary priority than in those that did not (Other); p<0.005 or better, chi squared test of association.



Idealized Models

Consortium advocates stress that consortia would be better positioned than any national organization to deal with local or regional medical training realities and health care needs. They believe that consortia would serve as a vehicle for rationalizing the presently fragmented medical education system, would improve the organizational structure and governance of residency training programs, and would provide an equitable mechanism for distributing residency training positions. They believe also that consortia would bring together the complementary strengths of different institutions, thereby enhancing educational quality and better aligning education with the needs of the newly emerging health care system. Mutual partnerships and collaborations have long been an essential element for succesful medical education, and consortia provide a means of perpetuating, and where necessary expanding, such interactions in the future.

Given these broad expectations, it may be pertinent to highlight the common features that consortia will likely need to facilitate their emergence as a fundamentally new approach to the organization and governance of medical education. First and foremost, consortia should include medical schools. The inherent logic of having medical education organized around the nation's universities and medical schools is perhaps best supported by present reality: Virtually all currently active consortia include one or more allopathic or osteopathic medical schools, and in the vast majority of cases the other partners do not feel dominated by the medical school.[17] In this regard, it is also worth noting that the the nation's medical schools already have substantive relationships with the majority of the country's graduate medical education programs,[35] and that the American Osteopathic Association Board of Trustees recently approved a new graduate medical education accreditation system that requires all Osteopathic Postdoctoral Training Institutions (essentially consortia of different training sites) to contain at least one American Osteopathic Association accredited college.[15]

It is recognized that not all authorities agree with this position. Recent changes in health care financing in the state of New York, for example, provide for the development of consortia but do not require the involvement of medical schools.[36] This position may also raise concern in teaching hospitals presently not affiliated with a medical school. Nonetheless, most educators would agree that medical education is a continuum, and that undergraduate, graduate and continuing medical education are best treated, at least conceptually, as a whole. Moreover, it should be evident that medical practice, research and education are inextricably linked, and that education is the vehicle that translates research into practice both within and across generations.

Given this broad context, a multilateral organization such as an educational consortium is likely to provide the ideal vehicle for bringing all the necessary partners together. It is difficult to visualize a quality medical education program in the future that does not include the active participation of a medical school on the one hand or that is not sensitive to the many differences between medical schools, hospitals, community training sites and the communities they all ultimately serve on the other. The composition of a consortium is of paramount importance not only because because membership presupposes mission, but also because it provides insight into the feasibility of fully achieving the organization's stated goals. A goal to enhance interdisciplinary approaches to health care delivery, for example, makes little sense unless a broad spectrum of health care professionals is sitting at the table. Likewise, plans to enhance ambulatory care training in community settings is unlikely to succeed without the active involvement of public health authorities or physicians in practice.

Consortia should entertain a broad view of workforce "competence", one that incorporates both "education" and "workforce" considerations. Competence should be viewed not so much an innate characteristic, but rather a property that is only fully expressed when the overall process of medical education is organized within the framework of societal needs and expectations. With this in mind, consortia must recognize the need for a national workforce that, collectively, has relevant practice, research and educational expertise. Consortia must also be responsive to local health care needs, promoting the need for a rationally distributed regional workforce with appropriate generalist and subspecialist practice skills. And, consortia must be responsive to social and political needs, championing the need for a physician workforce that reflects the diversity of the population from which it is drawn.

Consortia must have a collective and comprehensive vision—a vision which includes a

well-defined mission anchored by a commitment to educational quality. Consortia should include medical schools and facilitate the integration of undergraduate and graduate medical education. However, the consortium collectively—rather than the medical school—should assume overall responsibility for medical education, channeling reform in appropriate directions, even though its individual members will remain the agents of the educational process itself. Consortia must also be vigilant in maintaining an appropriate balance between education and service—between the resident as "student" and the resident as "employee".

Careful consideration should be given to how the educational mission will interface with the particular health care delivery system (or systems) involved. This will be especially important when overlapping, and therefore potentially competitive, delivery systems form the operational matrix of the consortium. In such circumstances, the consortium must assume the primary responsibility for delineating just how a common educational mission will interface with the different health care delivery systems involved.

Education and workforce goals should be clearly delineated. Graduate medical education consortia, no less than any other academic constituency, will be asked to defend their "education template"—which, at a minimum, should be designed to facilitate the process of education and to ensure that all necessary competencies are instilled in the practitioners, investigators and educators of tomorrow. Although education should be a consortium's primary priority, its product must also be able to meet present and future health care needs. Toward this end, the training environment should be carefully evaluated, and enhanced where necessary.

Medical professionalism, scientific literacy and a commitment to life long learning are the foundation of medical education, but the curriculum must also provide graduates with the ability to practice effectively in the modern health care environment. Generalism should be fostered, specialist practice and procedural skills enhanced, and the research and educational expertise of the physician workforce assured. The recruitment and promotion of women and minorities should be given attention and the problem of the medically-underserved in rural and inner city areas must also be addressed.

Administrative goals and objectives should also be clearly delineated. In return for public funding, consortia must function in an accountable and cost-efficient manner. Moreover, without an appropriate administrative and management infrastructure, consortia will be unable to deal effectively, let alone innovatively, with education and workforce reform.

The legitimacy of an inherently multilateral organization such as a graduate medical education consortium must be above reproach. This requires more than just a common vision and well-defined mission. Ideally, the power to set policy, and to measure outcomes against expectations, should be vested in the consortium as a whole. Governance must be characterized by clear lines of authority and defined responsibilities, representative membership, and collective decision-making. Partnership equity, which includes considerations of both benefit and risk sharing, should be evident in the structure of the consortium, in its operations (especially in how resources flow) and in the setting and measurement of outcomes.

The scope and nature of the authority that the membership is willing to cede to the consortium is a good measure of collective decision making. To be effective, consortia must control the content, and be responsible for the quality, of medical education. They must have authority to reorganize medical education and to reaffirm, and where necessary remake, their product. Authority to set educational standards, to evaluate training program quality, and to choose to sponsor some training programs (but not others), should be the perogative of the consortium rather than a right of individual partners.

To effect substantive change in graduate medical education, consortia must have the educational and fiscal authority to do so. In the final analysis, this requires control of the "currency" of graduate medical education, residency programs and positions. Graduate medical education programs in each specialty or discipline represented should ultimately be fully integrated and the consortium should be the official sponsor of all programs. This would obviate the need for distributing residents between competing programs of variable quality and eliminate duplicative administrative services, thereby enhancing both educational quality and overall operational efficiency. Although the advantages of single sponsorship are clear—and educational consortia have been accepted by both the Accreditation Council on Graduate Medical Education and the American Osteopathic Associations's Council on Postdoctoral Training as legitimate graduate medical education sponsoring institutions[5,11]—unambiguous policies and procedures that would facilitate the transfer of authority from individual programs to consortia still need to be developed.

Consortia should have centralized administrative and management systems, common resident financial and personnel policies and procedures, common resident supervision and evaluation systems, and a centralized program accreditation process. Centralized control is a direct function of

training program sponsorship—the official sponsoring institution for any graduate medical education program having ultimate responsibility for all program parameters.[15,33] Thus, if a consortium, rather than any of its individual members, were the official program sponsor, the consortium would automatically assume these responsibilities.

To be effective, consortia must have access to the resources—including federal, state and private graduate medical education payments—essential to the conduct of medical education. Ideally, this requires a common graduate medical education expense system, but it may be unrealistic to expect this when Medicare statutes and regulations presently allow only hospitals to receive graduate medical education payments. Reform of graduate medical education financing is long overdue, including legislation to allow the Health Care Financing Administration to direct payments to consortia as well as to hospitals.[24,29] In the meantime, and at the very least, there must be prospective agreement, on an annual basis, to graduate medical education resource distribution. Whatever the particular mechanism employed, the overall costs of operating the consortium must be shared equitably by all members of the organization and funds must be disbursed to members on the basis of training expenses actually incurred.

Consortium Demonstration Projects

If consortia are to be an integral element of the graduate medical education system, it follows that they must be structured in a fashion that will enhance their effectiveness. This should not be taken to imply that there is a single "correct" model against which all consortia should be measured or even that presently available information allows prediction of the "best" model. Indeed, COGME has advocated consortium demonstration projects in the past,[17] and does so now again. Nonetheless, there are certain characteristics that should be imbedded in any consortium, no matter how its developers intend to merge and restructure their individual organizations (see "Idealized Models").

To justify public support, consortium demonstration projects must be committed to providing a cost-effective administrative framework within which education and workforce reform can occur. In return, all payers of health care services should provide the funds necessary to ensure successful completion of the project. While funding should ideally include all payers of health care (Medicare, Medicaid and the private sector), in the absence of enactment of a shared responsibility fund for graduate medical education, the states and private medical insurance industry should be encouraged to provide matching resources to those provided by the federal government through the Medicare program.

To promote innovation, the financial risks inherent in these projects, especially in altering the size and composition of graduate medical education programs, should be reduced. Neither the consortium collectively, nor its individual partners, should stand to lose graduate medical education payments during the demonstration period. However, any "hold harmless" provision should be made contingent on the consortium agreeing to a "workforce contingency"; that is, agreeing to restructure its training programs in a defined fashion. Given national physician workforce needs,[1-6] a commitment to increasing the output of generalists while at the same time decreasing the the output of subspecialists would be a reasonable approach.

In return for graduate medical education payments being guaranteed (at the level the year prior to the award) for the duration of the award, consortia with less than 50% generalist residents could agree, for example, to increase their output of generalists by 20%, and decrease their output of subspecialists by 25%, over each three year period of the award or until a 1:1 distribution of the two groups was attained. Consortia with 50% or more generalist residents (residents in family practice, general internal medicine, general pediatrics, preventive medicine and geriatric medicine training programs) could agree to maintain at least this proportion of generalist trainees for the duration of the award.

The effects of the suggested parameters in three hypothetical model consortia over a nine year time period (representing three renewable 3-year project grant periods) are summarized in Table 18. All start with 1000 residents, but have different ratios of generalist to subspecialist trainees. Consortium A, with 40% generalist trainees, most closely resembles the overall distribution of residents reported in 1995-96: 39,411 residents in generalist specialties out of a total of 98,035 (40.2%).[18] Consortium A achieves the required generalist to subspecialist ratio after only three years, and with only a very modest decrease in the total number of trainees (7%). In contrast, more subspecialty dominant consortia (Consortia B and C) require six and nine years, respectively, to reach the desired ratio,

TABLE 18 – Consortium Demonstration Projects
Effects of Hypothetical Workforce Contingency

Year	Ratio	Generalists	Subspecialists	Total
Consortium A				
0	0.40	400	600	1000
3	0.52	480	450	930
6	0.52	480	450	930
9	0.52	480	450	930
Consortium B				
0	0.30	300	700	1000
3	0.41	360	525	885
6	0.52	432	394	826
9	0.52	432	394	826
Consortium C				
0	0.20	200	800	1000
3	0.29	240	600	840
6	0.39	288	450	738
9	0.51	346	338	684

Ratio = ratio of generalist to total residents in training. See text for discussion.

and undergo more significant contraction (17% and 32%, respectively).

Demonstration project funding could also contain incentives to ensure certain organizational structures (for example, the transfer of official sponsorship of residency programs from individual members to the consortium) and to promote physician workforce policy goals (for example, increasing the ratio of generalist, women and minority residents to total residents, increasing the number of graduates practicing in Health Professions Shortage Areas, and so on) (Table 19).

TABLE 19 – Consortium Demonstration Projects *Potential Funding Incentives*

Organizational Structure

- The total number of residents sponsored by the consortium, as opposed to individual members ("sponsorship" being defined as official responsibility for the management of a graduate medical education program, i.e., recognition by the appropriate accrediting body—the Accreditation Council for Graduate Medical Education for allopathic programs and the American Osteopathic Association's Council on Postdoctoral Training for osteopathic programs).

Physician Workforce Policy Goals

- The ratio of generalist (family practice, general internal medicine, general pediatrics, preventive medicine, geriatric medicine) residents to total residents,
- The ratio of women to total residents;
- The ratio of residents from under represented minorities (African Americans, Mexican Americans, American Indians/Alaska Natives, mainland Puerto Ricans) to total residents;
- In the second through subsequent years of the award, the ratio of consortium graduates practicing in Health Professions Shortage Areas to total consortium graduates.

Promoting Educational Consortia

Determining how educational consortia might best be structured will likely prove a more simple task than promoting their widespread implementation. Consortia are still relatively rare. One reason for this is that, for the most part, policy makers have yet to devise financing methods that favor, or even use, consortia. To promote the development of consortia, federal and state policy makers will have to provide appropriate incentives.

The importance of such incentives is perhaps best illustrated by the history of Area Health Education Centers (AHECs) and by the recent development of consortia in New York and Tennessee. Originally envisioned by the Carnegie Commission on Higher Education,[39] AHECs have a broad mandate to train many types of health professionals and address health care delivery in underserved areas. Although now more dependent on state support, federal development grants were critical to the early success of the AHEC program.[40]

Likewise, despite a long interest in consortia, dating back to their endorsement by the New York State Commission on Graduate Medical Education in 1986, it was not until state development grants were made available that large numbers of consortia began to be organized in New York.[41] Health care reimbursment incentives for consortium development and workforce reform are also part of the New York State Health Reform Act of 1996,[36] and have led to the development of guidelines for the certification of graduate medical education consortia by the New York State Council on Graduate Medical Education.[42] Enacted as a component of the state TennCare program, health care reimbursement incentives for workforce reform and consortium development in Tennesee have had similar effects.[43]

Incentives to promote the widespread development of consortia could be modeled after those established by the consortium demonstration projects. At a minimum, these should include financial incentives that would enhance the composition, geographic distribution and diversity of the physician workforce. In addition, these incentives ideally should have a "shared responsibility" mantra, including defined contributions from all payers of health care services: Medicare, Medicaid and the private insurance industry alike.

Summary & Conclusions

Medical education consortia have been proposed as the solution to many of the problems currently facing medical education, especially graduate medical education. However, given their mixed record, the question naturally arises whether the widespread adoption of consortia would provide a vehicle for rationalizing the presently fragmented graduate medical education system, for maintaining and enhancing educational quality and for reforming the physician workforce. It is certainly reasonable to expect consortia to provide a framework within which medical education, and especially graduate medical education, can be critically examined and an equitable forum within which all interested constituencies can participate. Indeed, existing consortia can point to enhanced working relations and management efficiencies with justifiable pride. However, as currently structured, consortia do not represent a fundamentally new approach to medical education. Nor, by themselves and in the absence of appropriate incentives, should they be expected to reform the physician workforce.

Consortia are certainly not a panacea for all the problems of the present system of medical education. Consortia, acting alone, cannot deal with the separation of responsibility for medical education or the malalignment of medical education with health care needs. These are tasks for the leadership of academic medicine as a whole. Nor should the concept of medical education consortia—or its avid promotion—be used to divert attention from the lack of a secure funding base for medical education, the service needs of academic medical centers or the health care needs of the uninsured. Most importantly, the promotion of medical education consortia should not be seen as a substitute for reforming the financing of graduate medical education or for substantive reform of the health care system itself.

Until there are unambiguous incentives for expanding the content, and diversifying the process, of medical education, health care delivery expectations will likely continue to excede the performance of the present health care system. There is no inherent linkage between the concept of medical education consortia and the quality of medical education. One can exist without the other on the one hand, while on the other, one does not necessarily result in the other. Conscious efforts on the part of consortia to address the quality of medical education and aggressive enforcement of standards on the part of accrediting and licensing bodies will be necessary if consortia are to be a force in maintaining and enhancing educational quality. This is a task that will require the active and explicit support of the leadership of acdemic medicine, and a realization on the part of policy makers that quality is best assured by reorganizing graduate medical education around the institutions best equipped to deal with it—the nation's universities and medical schools.

The idea that graduate medical education consortia, in and of themselves, will be able to improve the composition, distribution and diversity of the physician workforce is also seriously flawed. There is no inherent linkage between the concept of medical education consortia and the achievement of national physician workforce objectives. Conscious efforts on the part of consortia to address physician workforce objectives and appropriate incentives on the part of policy makers to encourage them to do so will be necessary if consortia are to be a means or a force in meeting those objectives. This is a task that will require extensive input from all sectors of the health care industry and the experience of a broad range of social, economic and legal policy experts as well.

Finally, it is imperative to keep in mind that education reform will not, by itself, reform the health care system. Rather the driving force is in the opposite direction. Samuel Thier, then President of Brandeis University, in his keynote address to the 1992 Macy Foundation conference on graduate medical education perhaps said this best: "The problem is not with graduate medical education. Rather, the problem lies in the way the nation reimburses for health care services and in the way the entire health system is organized. Every time you fail to remember that, you set yourself up to be frustrated five or ten years down the road, when all the corrections you have made, even if they were all good and all well carried out, fail to have the outcome that you were hoping for. You have to continually remind yourself that the change you bring about, important as it is, cannot transform the health system".[44]

COGME believes that the consortium concept could serve both as a catalyst and as a unifying force in reorganizing medical education. COGME further believes that appropriately structured educational consortia could provide a solid foundation upon which substantive educational and workforce

reform could take place. Such a role requires that consortia have the authority and responsibility to determine the content and assess the quality of medical education, to define educational and workforce outcomes, and to receive and distribute educational resources.

COGME considers support of the specific recommendations in this report a wise and prudent investment in the continuing effort to provide the nation with easy and equal access to comprehensive, high quality health care. However, COGME emphasizes that although consortia may provide a fertile environment for reform, reform will not take root until more deep-seated problems in the governance and financing of medical education are resolved and the health care system itself is restructured. It is only within such a broad context that an appropriate template for the reform of medical education will be found.

References

1. *Graduate Medical Education National Advisory Committee. Summary Report.* DHHS Pub. No. (HRA)81-651, Washington DC, April 1981.

Rosenblatt R. *Surplus or Shortage? Unraveling the Physician Supply Conundrum.* Western J Med 1991; 154:43-50.

Council on Graduate Medical Education. *Third Report: Improving Access to Health Care through Physician Workforce Reform.* U.S. Department of Health & Human Services, Public Health Service, Health Resources and Services Administration. Rockville MD, 1992.

Wennberg JE, Goodman DC, Nease RF, Keller RB. Finding Equilibrium in U.S. Physician Supply. *Health Affairs* 1993(Summer); pp 89-103.

Weiner J. Forecasting the Effects of Health Care Reform on U.S. Physician Workforce Requirement: Evidence from HMO Staffing Patterns. *JAMA* 1994; 272:222-30.

Cooper RA. Seeking a Balanced Physician Workforce for the 21st Century. *JAMA* 1994; 272:680-6.

Schroeder S. Managing the U.S. Health Care Workforce: Creating Policy Amidst Uncertainty. *Inquiry* 1994(Fall); 28:266-75.

Council on Graduate Medical Education. *Fourth Report: Recommendations to Improve Access to Health Care through Physician Workforce Reform.* U.S. Department of Health & Human Services, Public Health Service, Health Resources and Services Administration, Rockville MD, 1994.

Weiner J. Assessing Current and Future U.S. Physicians Requirements Based on HMO Staffing Ratios: A Synthesis of New Sources of Data and Forecasts for the Years 2000 to 2020. Technical Working Paper. U.S. Department of Health & Human Services, Public Health Service, Health Resources and Services Administration, Rockville MD, 1995.

Gamliel S., Politzer R., Rivo M., Mullan F. Managed Care on the March: Will Physicians Meet the Challenge? *Health Affairs* 1995(Summer); pp 135-8.

Whitcomb MA. A Cross-National Comparison of Generalist Physician Workforce Data: Evidence for U.S. Supply Adequacy. *JAMA* 1995; 274:692-5.

The Third Report of the Pew Health Professions Commission. Critical Challenges: Revitalizing the Health Professions for the Twenty-First Century. Center for the Health Professions, University of California, San Francisco CA, 1995.

Lohr KN, Vanselow NA, Detmer DE (eds). *The Nation's Physician Workforce: Options for Balancing Supply and Requirements.* National Academy Press, Washington DC, 1996.

Rivo ML, Kindig DA. A Report Card on the Physician Work Force in the United States. *N Engl J Med* 1996; 334:892-6.

Council on Graduate Medical Education. *Eighth Report: Patient Care Physician Supply and Requirements: Testing COGME Recommendations.* U.S. Department of Health & Human Services, Public Health Service, Health Resources and Services Administration, Rockville MD (1996).

2. *Graduate Medical Education National Advisory Committee, Summary Report.* DHHS Pub. No.(HRA)81-651, Washington DC, April 1981.

Stevens RA. Defining and Certifying the Specialists. In: Ginzberg E, Ostow M (eds). *The Coming Physician Surplus: In Search of a Policy.* Rowman & Allanheld, Totowa NJ, 1984 pp 83-98.

Starfield B. *Primary Care: Concept, Evaluation, and Policy.* Oxford University Press, New York NY, 1992.

AAMC Policy on the Generalist Physician. *Acad Med* 1993; 68:1-5.

The Role of the Future General Internist Defined. American College of Physicians Position Paper. *Ann Intern Med* 1994; 121:616-22.

Kimball HR, Young PR. A Statement on the Generalist Physician from the American Boards of Family Practice and Internal Medicine. *JAMA* 1994; 271:315-6.

Kindig DA. Counting Generalist Physicians. *JAMA* 1994;271:1505-7.

Rivo ML, Saultz JW, Wartman SA, DeWitt TG. Defining the Generalist Physician's Training. *JAMA* 1994; 271:1499-504.

Donaldson MS, Yordy K Vanselow N (eds). *Defining Primary Care: An Interim Report.* National Academy Press, Washington DC, 1994.

Altman D. Revising the Definition of the Generalist Physician. *Acad Med* 1995; 70:1087-90.

Saultz JW. Reflections on Internal Medicine and Family Medicine. *Ann Intern Med* 1996; 124:600-3.

Cohen JJ, Whitcomb ME. Are the Recommendations of the AAMC's Task Force on the Generalist Physician Still Valid? *Acad Med* 1997; 72:13-6.

3. Aiken LH, Lewis CE, Mendenhall RC, Blendon RJ, Rogers DE. The Contribution of Specialists to the Delivery of Primary Care. *N Engl J Med* 1979; 300:1363-70.

Report of the 1993 ABIM Summer Conference. The General Internist: Who, What, Where, When, How — and Why? Section II — Who Is the General Internist? American Board of Internal Medicine, 1993.

Council of the Association of Subspecialty Professors. Association of Subspecialty Professors: Why This and Why Now? *Am J Med* 1994; 96(6): I-IV.

Christakis NA, Jacobs JA, Messikomer CM. Change in Self-Definition from Specialist to Generalist in a National Sample of Physicians. *Ann Intern Med* 1994; 121:669-75.

Benson JA, Jr. Future Relationships of the Medical Subspecialist with Other Health Care providers: What is the Optimal Model? *Report of the 1994 ABIM Summer Conference. The Role and Education of the medical Subspecialist in the 21st Century.* American Board of Internal Medicine, 1994, pp 105-14.

Braunwald E. The Role of Academic Medical Subspecialists in the 21st Century. *Report of the 1994 Summer Conference. The Role and Education of the Medical Subspecialist in the 21st Century.* American Board of Internal Medicine, 1994, pp 37-41.

Schafer AI. Deployment of Academic Subspecialists in the Emerging Era of Primary Care. *Am J Med* 1995; 99:69-73.

Langdon LO, Toskes PP, Kimball HR, and the American Board of Internal Medicine Task Force on Subspecialty Internal Medicine. *Ann Intern Med* 1996; 124:686-91.

Weiner JP. Internal Medicine at the Crossroads: Training Subspecialists for the Next Century. *Ann Intern Med* 1996; 124:681-2.

4. Physician Career Change Education. A Position Paper of the American Academy of Family Physicians, September 1993.

American College of Physicians Task Force on Career Change. Report to the Educational Policy Committee, October 1994.

Pew Health Professions Commission. *Physician Retraining as a Strategy to Enhance the Primary Care Workforce.* Center for the Health Professions, University of California, San Francisco CA, 1994.

Wall EM, Saultz JW. Retraining the Subspecialist for a Primary Care Career: Four Possible Pathways. *Acad Med* 1994; 69:261-6.

5. *Report of the 1993 ABIM Summer Conference. The General Internist: Who, What, Where, When, How — and Why? Section III — When Do Others Provide Generalist Care?* American Board of Internal Medicine, 1993.

Aiken LH, Sage WM. Staffing National Health Care Reform: A Role for Advanced Practice Nurses. *Akron Law Review* 1993; 26:187-211.

Mundinger MO. Advanced Practice Nursing — Good Medicine for Physicians? *N Engl J Med* 1994; 330:211-4.

Kassirer JP. What Role for Nurse Practitioners in Primary Care? *N Engl J Med* 1994; 330:204-5.

Sekscenski ES, Sansom S, Bazell C, Salmon ME, Mullan F. State Practice Environments and the Supply of Physician Assistants, Nurse Practitioners, and Certified Nurse-Midwives. *N Engl J Med* 1994; 331:1266-71.

Physician Assistants and Nurse Practitioners. American College of Physicians Position Paper. *Ann Intern Med* 1994; 121:714-6.

Pew Health Professions Commission. *Nurse Practitioners. Doubling the Graduates by the Year 2000.* Center for the Health Professions, University of California, San Francisco CA, 1994.

6. Muller S (Chairman). Physicians for the Twenty-First Century: Report of the Project Panel on the General Professional Education of the Physician and College Preparation for Medicine. *J Med Educ* 1984; 59:(Supplement, November 1984).

Shugars DA, O'Neil EH, Bader JD (eds). *Healthy America: Practitioners for 2005, an Agenda for Action for U.S. Health Professional Schools.* The Pew Health Professions Commission, Durham NC, 1991.

Council on Graduate Medical Education. *Third Report: Improving Access to Health Care through Physician Workforce Reform.* U.S. Department of Health & Human Services, Public Health Service, Health Resources and Services Administration. Rockville MD, 1992.

Greenlick M. Educating Physicians for Population Based Clinical Practice. *JAMA* 1992; 267:1645-8.

Swanson AG (Principal Investigator). Educating Medical Students. Assessing Change in Medical Education — The Road to Implementation (The ACME-TRI Report). *Acad Med* 1993; 68: (Supplement, June 1993).

Wright RA. Community-Oriented Primary Care: The Cornerstone of Health Care Reform. *JAMA* 1993; 269:2544-7.

Starfield B, Simpson L. Primary Care as Part of U.S. Health Services Reform. *JAMA* 1993; 269:3136-9.

Palsbo SE, Sullivan CB. *The Recruitment Experience of Health Maintenance Organizations for Primary Care Physicians: Final Summary Report.* Group Health Association of America, May 1993.

Reynolds DS. A Matter of Payers' Preference. *Report of the 1993 ABIM Summer Conference. The General Internist: Who, What, Where, When, How — and Why! Section I — Why Are More General Internists Required?* pp 27-41.

Cantor JC, Baker LC, Hughes RG. Preparedness for Practice: Young Physicians' Views of their Professional Education. *JAMA* 1993; 270:1035-40.

Pew Health Professions Commission. *Health Professions Education for the Future: Schools in Service to the Nation.* Center for the Health Professions, University of California, San Francisco CA, 1993.

Doherty J, Ludden J. *Primary Care Physicians: Recommendations to Reform Medical Education to Increase the Supply of Physicians Trained to Practice in Managed Care.* Group Health Association of America, April 1993.

Cantor JC, Baker LC, Hughes RG. Preparedness for Practice: Young Physicians' Views of their Professional Education. *JAMA* 1993; 270:1035-40.

Council on Graduate Medical Education. *Sixth Report. Managed Health Care: Implications for the Physician Workforce and Medical Education.* U.S. Department of Health & Human Services, Public Health Service, Health Resources and Services Administration, Rockville MD, 1995.

Stagnaro-Green A, Packman C, Baker E, Elnicki DM. Ambulatory Education: Expanding Undergraduate Experience in Medical Education. A CDIM Commentary. *Am J Med* 1995; 99:111-115.

Rivo ML, Mays HL, Katzoff J, Kindig DA, for the Council on Graduate Medical Education. Managed Health Care: Implications for the Physician Workforce and Medical Education. *JAMA* 1995; 274:712-715.

Petersdorf RG, Turner KS. Medical Education in the 1990s—and beyond; A View from the United States. *Acad Med* 1995; 70 (Supplement):41-7.

Blumenthal D, Thier SO. Managed Care and Medical Education. The New Fundamentals. *JAMA* 1996; 276:725-7.

7. Ebert RH, Brown SS. Academic Health Centers. *N Engl J Med* 1983; 308:1200-8.

Chusid J. *Teaching Hospitals: Multiple Roles, Distinctive Characteristics.* Association of American Medical Colleges, Washington DC, 1989.

DeBakey ME. Medical Centers of Excellence and Health Reform. *Science* 1993; 262:523-5.

Academic Medicine and Health Care Reform. *Academic Medicine: The Cornerstone of the American Health Care System.* Association of American Medical Colleges, Washington DC, 1993.

Iglehart JK. The American Health Care System. Teaching Hospitals. *N Engl J Med* 1993; 329:1052-6.

Blumenthal D, Meyer GS. The Future of the Academic Medical Center Under Health Care Reform. *N Engl J Med* 1993; 329:1812-4.

8. Coggeshall LT. *Planning for Medical Progress Through Education.* Association of American Medical Colleges, Evanston IL, 1965.

Millis JS (Chairman). The Graduate Education of Physicians. *Report of the Citizens Commission on Graduate Medical Education.* American Medical Association, Chicago IL, 1966.

Smythe CMcC, Kinney TD, Littlemeyer MH (eds). The Role of the University in Graduate Medical Education: Proceedings of the Conference, Council of Academic Societies, Association of American Medical Colleges, October 2-5, 1968. *J Med Educ* 1969; 44(Special Issue, September):723-895.

Stevens R. *American Medicine and the Public Interest.* Yale University Press, New Haven CT, 1971.

Myers JD (Chairman). Graduate Medical Education: Proposals for the Eighties. Report of the AAMC Task Force on Graduate Medical Education. *J Med Educ* 1981; 56 (September, Part 2):1-45.

Ebert RH, Ginzberg E. The Reform of Medical Education. *Health Affairs* 1988; 7(Supplement):5-38.

Morris TQ, Sirica CM (eds). *Taking Charge of Graduate Medical Education: To Meet the Nation's Needs in the 21st Century.* Josiah Macy Jr Foundation, New York, NY, 1993.

9. Schroeder SA, Showstack JA, Gerbert B. Residency Training in Internal Medicine: Time for a Change? *Ann Intern Med* 1986; 104:554-61.

Schroeder SA. Expanding the Site of Clinical Education: Moving Beyond the Hospital Walls. *J Gen Intern Med* 1988; 3:S6-S14.

Boufford JI. Changing Paths and Places for Training Tomorrow's Generalists. In: *Clinical Education and the Doctor of Tomorrow* (Gastel B, Rogers DE, eds), New York Academy of Medicine, New York NY, 1989, pp 67-80.

Moore GT. Health Maintenance Organizations and Medical Education: Breaking the Barriers. *Acad Med* 1990; 65:427-32.

Halperin AK, Kaufman A. Ambulatory Medical Education: A Reconsideration of Sites and Teachers. *J Gen Intern Med* 1990; 5:S35-S44.

Greenlick M. Educating Physicians for Population Based Clinical Practice. *JAMA* 1992; 267:1645-8.

Council on Graduate Medical Education. *Third Report: Improving Access to Health Care through Physician Workforce Reform. Directions for the 21st Century.* U.S. Department of Health & Human Services, Public Health Service, Health Resources and Services Administration, Rockville MD, 1992.

Pew Health Professions Commission. *Health Professions Education for the Future: Schools in Service to the Nation.* Center for the Health Professions, University of California, San Francisco CA, 1993.

Krackov SK, Packman CH, Regan-Smith MG, Birskovich L, Seward SJ, Baker SD. Perspectives on Ambulatory Programs: Barriers and Implementation Strategies. *Teach Learn Med* 1993; 5:243-250.

Doherty J, Ludden J. Primary Care Physicians: Recommendations to Reform Medical Education to Increase the Supply of Physicians Trained to Practice in Managed Care. Group Health Association of America, April 1993.

Veloski JJ, Howell S. Educating New Physicians for Managed Care. *J Outcomes Management* 1994; 1:17-21.

Council on Graduate Medical Education. *Sixth Report. Managed Health Care: Implications for the Physician Workforce and Medical Education.* U.S. Department of Health & Human Services, Public Health Service, Health Resources and Services Administration, Rockville MD, 1995.

Stagnaro-Green A, Packman C, Baker E, Elnicki DM. Ambulatory Education: Expanding Undergraduate Experience in Medical Education. A CDIM Commentary. *Am J Med* 1995; 99:111-115.

Rivo ML, Altman D, Floss F. (eds). Primary Care and the Education of the Generalist Physician: Coming of Age. *Acad Med* 1995; 70 (Supplement, January, 1995).

10. Ginzberg E, Ostow M, Dutka AB. *The Economics of Medical Education.* The Josiah Macy Jr Foundation, New York NY, 1993.

Task Force on Health Systems Reform and Medical Education. Potential Impact of Health System Reform on Medical Education. *JAMA* 1993; 270:1100-1.

Iglehart JK. Rapid Changes for Academic Medical Centers. *N Engl J Med* 1994; 331: 1391-95 (Part 1) and 332:407-11 (Part 2).

Cohen JJ. Finding the Silver Lining Without the Golden Eggs. Presidential Address, 105th Annual Meeting of the Association of American Medical Colleges, Boston, October 30, 1994. Association of american Medical Colleges, Washington DC, 1994.

Epstein AM. US Teaching Hospitals in the Evolving Health Care System. *JAMA* 1995; 273:1203-7.

Franco C. *Medicare's Financing of Graduate Medical Education: Issues and Proposed Reforms.* Congressional Research Service, The Library of Congress, Washington DC, May 29, 1996.

Public Support of the Medical Education System: An Assessment of Potential Revenue Sources and Related Matters. Association of American Medical Colleges, Washington DC, February 9, 1996.

11. Sloan FA, Valvona, Mullner R. Identifying the Issues: A Statistical Profile. In: Sloan FA, Blumstein JF, Perrin JM. *Uncompensated Hospital Care: Rights and Responsibilities.* The Johns Hopkins University Press, Baltimore MD, 1986, pp 15-83.

Weissman JS, Epstein AM. *Falling Trough the Safety Net: Insurance Status and Access to Health Care.* The Johns Hopkins University Press, Baltimore MD, 1994.

Epstein AM. US Teaching Hospitals in the Evolving Health Care System. *JAMA* 1995; 273:1203-7.

Weissman J. Uncompensated Hospital Care. Will It Be There If We Need It? *JAMA* 1996; 276:823-8.

Schroeder SA. The Medically Uninsured — Will They Always Be With Us? *N Engl J Med* 1996; 334:1130-3.

Moy E, Valente E, Jr, Levin RL, Griner PF. Academic Medical Centers and the Case of Underserved populations. *Acad Med* 1996; 71:1370-7.

12. Council on Graduate Medical Education. *Fourth Report: Recommendations to Improve Access to Health Care Through Physician Workforce Reform.* U.S. Department of Health & Human Services, Public Health Service, Health Resources and Services Administration, Rockville MD, 1994.

13. New York State Council on Graduate Medical Education. Fourth Annual Report, 1991.

14. Association of American Medical Colleges. AAMC Position Paper on Academic Medicine and Health Care Reform — Graduate Medical Education. *Acad Med* 1993; 68:717-24.

15. *Program to Accredit Osteopathic Postdoctoral Training Institutions.* Chapter 1: Standards for the Accreditation of Osteopathic Postdoctoral Training Instiutions. American Osteopathic Association, Chicago IL, 1996, pp 1-6.

16. Kelly JV, Larned FS, Smits HL. *Graduate Medical Education Consortia: Expectations and Experiences.* Association of American Medical Colleges, Washington DC, 1994.

Kelley JV, Larned FS, Smits HL. Graduate Medical Education Consortia: Expectations and Experiences. *Acad Med* 1994; 69:931-43.

17. Cox M, Dower C. *Graduate Medical Education Consortia: A National Survey.* Association of American Medical Colleges, Washington DC, 1996.

18. Cox M, Dower C. AAMC/CHP Survey of GME Consortia, unpublished observations.

19. Lyttle CS, Levey GS. The National Study of Internal Medicine Manpower: XX. The Changing Demographics of Internal Medicine Residency Programs. *Ann Intern Med* 1994; 121:435-41.

Randlett RR. Results of the National Resident Matching Program for 1995. *Acad Med* 1995; 70:547-9.

Kassebaum DG, Szenas PL. Specialty Intentions of 1995 US Medical School Graduates and Patterns of Generalist Career Choice and Decision Making. *Acad Med* 1995; 70:1152-7.

Philibert I, Dickler R, Ibrahim T, Glickman R. *COTH/APM Survey of Initiatives to Change the Size and Configuration of Internal Medicine Training Programs — Preliminary Results.* Association of American Medical Colleges, Washington DC, October 1995.

Schafer J. Postgraduate Training Feels the Pinch. *J Invest Med* 1995; 43:399-404.

Schwartz AL. Will Competition Change the Physician Workforce? Early Signals from the Market. *Acad Med* 1996; 71:15-22.

Randlett RR. Creighton K. Results of the National Resident Matching Program for 1996. *Acad Med* 1996; 70:697-9.

Philbert I, Dickler R, and the Members of the COTH/APM Study Group. *Models for Downsizing Internal Medicine Residency Programs — Findings from Phase II of the COTH/APM Study*. Association of American Medical Colleges, Washington DC, July 1996.

Dunn MR, Miller RS. The Shifting Sands of Graduate Medical Education. *JAMA* 1996; 276:710-13 and Appendix II—Graduate Medical Education (pp 739-44).

Ginzburg E. The Future Supply of Physicians. *Acad Med* 1996; 71: 1147-53.

20. Whitcomb M. Perspectives on the Development and Future of Consortia. Presentation to the Council on Graduate Education. Washington DC, June 1996.

21. Lash MP, Dickler RM. *Organizational Networks: Issues for Academic Medicine*. Association of American Medical Colleges. Washington DC, October 1993.

Blumenthal D, Meyer G. The Future of the Academic Medical Center Under Health Care Reform. *N Engl J Med* 1993; 329:1812-4.

Goldman L. The Academic Health Care System. *JAMA* 1995; 273:1549-52.

Culbertson RA, Goode LD, Dickler RM. *Organizational Models: Medical School Relationships to the Clinical Enterprise*. Association of American Medical Colleges. Washington DC, August 1996.

22. Fishman LE. *Medicare Payments With an Education Label: Fundamentals and the Future*. Association of American Medical Colleges, Washington DC, October 1996.

23. Petersdorf RG. A Proposal for Financing Graduate Medical Education. *N Engl J Med* 1985; 312:1322-4.

Iglehart JK. Health Care Reform and Graduate Medical Education. *N Engl J Med* 1994; 330:1167-71.

Iglehart JK. Rapid Changes for Academic Medical Centers. Part 1. *N Engl J Med* 1994; 331:1391-5.

Epstein AM. US Teaching Hospitals in the Evolving Health Care System. *JAMA* 1995; 273:1203-7.

Public Support of the Medical Education System: An Assessment of Potential Revenue Sources and Related Matters. Association of American Medical Colleges, Washington DC, February 9, 1996.

Medical Education Trust Fund Act of 1997. Bill Introduced by Senator D.P. Moynihan (S. 21), U.S. Senate, Washington DC, January 21, 1997.

Medical Education Trust Fund Act of 1997. Bill Introduced by Representatives N. Lowey and L. Slaughter (H.R. 881), U.S. House of Representaives, Washington DC, February 27, 1997.

Muller RW. Future Financing of Graduate Medical Education. Statement to the Senate Committee on Finance, March 12, 1997. Association of American Medical Colleges, Washington DC

24. Consensus Statement on the Physician Workforce. Association of American Medical Colleges, American Association of Colleges of Osteopathic Medicine, American Medical Association, American Osteopathic Association, Association of Academic Health Centers, National Medical Association. Press Release, Washington DC, March 3, 1997.

25. Epstein AM. US Teaching Hospitals in the Evolving Health Care System. *JAMA* 1995; 273:1203-7.

Franco C. *Medicare's Financing of Graduate Medical Education: Issues and Proposed Reforms*. Congressional Research Service, The Library of Congress, Washington DC, May 29, 1996.

Medical Education Trust Fund Act of 1997. Bill Introduced by Senator D.P. Moynihan (S. 21), U.S. Senate, Washington DC, January 21, 1997.

Medical Education Trust Fund Act of 1997. Bill Introduced by Representatives N. Lowey and L. Slaughter (H.R. 881), U.S. House of Representaives, Washington DC, February 27, 1997.

26. Council on Graduate Medical Education. *Third Report: Improving Access to Health Care Through Physician Workforce Reform – Directions for the 21st Century.* U.S. Department of Health & Human Services, Public Health Service, Health Resources and Services Administration, Rockville MD, 1992.

Council on Graduate Medical Education. *Fourth Report: Recommendations to Improve Access to Health Care through Physician Workforce Reform.* U.S. Department of Health & Human Services, Public Health Service, Health Resources and Services Administration, Rockville MD, 1994.

Council on Graduate Medical Education. *Seventh Report.* U.S. Department of Health & Human Services, Public Health Service, Health Resources and Services Administration, Rockville MD, 1995.

27. House Ways and Means and Senate Finance Committee Reports, U.S. Congress, March 1983.

28. Iglehart JK. The American Health Care System. Medicare. *New Engl J Med* 1992; 327:1467-72.

Task Force on Health Systems Reform and Medical Education. Potential Impact of Health System Reform on Medical Education. *JAMA* 1993; 270:1100-1.

Iglehart JK. Health Care Reform and Graduate Medical Education. *N Engl J Med* 1994; 330:1167-71.

Iglehart JK. Rapid Changes for Academic Medical Centers. *N Engl J Med* 1994; 331: 1391-95 (Part 1) and 332:407-11 (Part 2).

Dobson A, Coleman K, Mechanic R. *Analysis of Teaching Hospital Costs.* Association of American Medical Colleges, Washington DC, 1994.

Ford N. On the Importance of the Medicare Program to the Overall Financial Viability of Academic Medicine. Testimony to the Committee on Ways and Means, Subcommiteee on Health, US House of Representatives, February 6, 1995. Association of American Medical Colleges, Washington DC.

Cohen JJ. Testimony to the Physician Payment Review Commission, November 17, 1995. Association of American Medical Colleges, Washington DC.

Epstein AM. US Teaching Hospitals in the Evolving Health Care System. *JAMA* 1995; 273:1203-7.

Iglehart JK. The Struggle to reform Medicare. *New Eng J Med* 1996; 334:1071-5.

Franco C. Medicare's Financing of Graduate Medical Education: Issues and Proposed Reforms. Congressional Research Service, The Library of Congress, Washington DC, May 29, 1996.

Public Support of the Medical Education System: An Assessment of Potential Revenue Sources and Related Matters. Association of American Medical Colleges, Washington DC, February 9, 1996.

D'Eramo D. Teaching Hospitals and Medicare Disproportionate Share Hospital Payments. Statement to the Committee on Ways and Means, Subcommittee on Health, U.S. House of Representatives, March 11, 1997. Association of American Medical Colleges, Washington DC.

Muller RW. Future Financing of Graduate Medical Education. Statement to the Senate Committee on Finance, March 12, 1997. Association of American Medical Colleges, Washington DC.

29. Council on Graduate Medical Education. *7th Report.* U.S. Department of Health and Human Services, Public Health Service, Health Resources and Services Administration, Rockville MD, June 1995.

Franco C. Medicare's Financing of Graduate Medical Education: Issues and Proposed Reforms. Congressional Research Service, The Library of Congress, Washington DC, May 29, 1996.

30. Delbanco TL, Calkins DR. Costs and Financing of Ambulatory Medical Education. *J Gen Intern Med* 1988; 3(March/April Supplement):34-43.

Bentley JD, Knapp RM, Petersdorf RG. Education in Ambulatory Care – Financing is One Piece of the Puzzle. *N Eng J Med* 1989; 320:1531-4.

Primary Care Physicians: Financing their GME in Ambulatory Settings. A Report of a Study by a Committee of the Institute of Medicine, Division of Health Care Services. National Academy Press, Washington DC, 1989.

Eisenberg JM. How Can We Pay for Graduate Medical Education in Ambulatory Care? *N Engl J Med* 1989; 320:1525-31.

Gamble JG, Lee R. Investigating Whether Education of Residents in a Group Practice Increases the Length of the Outpatient Visit. *Acad Med* 1991; 66:492-3.

Garg ML, Boero JF, Christiansen RG, Booher CG. Primary Care Teaching Physicians' Losses of Productivity and Revenue at Three Ambulatory-Care Centers. *Acad Med* 1991; 66:348-53.

Vinson DC, Padden C. The Effects of Teaching Medical Students on Private Practitioners' Workloads. *Acad Med* 1994; 69:237-8.

31. Hardison JE. The House Officer's Changing World. *N Engl J Med* 1986; 314:1713-5.

Butterfield PS. The Stress of the Residency. A Review of the Literature. *Arch Intern Med* 1988; 148:1428-35.

Asch DA, Parker RM. The Libby Zion Case: One Step Forward, or Two Steps Backward? *N Engl J Med* 1988; 318:771-5.

Glickman RM. House-staff Training—the Need for Careful Reform. *N Engl J Med* 1988; 318:780-2.

Lurie N, Rank B, Parenti C, Woolley T, Snoke W. How do House Officers Spend their Nights? A Time Study of Internal Medicine House Staff on Call. *N Engl J Med* 1989; 320:1673-7.

Reynolds PP. Professionalism and Residency Reform. Bull NY *Acad Med* 1991; 67:369-77.

Asch DA, Ende J. The Downsizing of Internal Medicine Residency Programs. *Ann Intern Med* 1992; 117:839-44.

Green MJ. What (If Anything) Is Wrong with Residency Overwork? *Ann Intern Med* 1995; 123:512-517.

Ben-Menachem T, Estrada C, Young MJ, Peethambaram P, Krol G, Scher EJ, Lesch M. Balancing Service and Education: Improving Internal Medicine Residencies in the Managed Care Era. *Am J Med* 1996; 100:224-9.

32. Coggeshall LT. *Planning for Medical Progress Through Education.* Association of American Medical Colleges, Evanston IL, 1965.

Stead EA Jr. The Role of the University in Graduate Training. In: Smythe CMcC, Kinney TD, Littlemeyer MH (eds). The Role of the University in Graduate Medical Education: Proceedings of the Conference, Council of Academic Societies, Association of American Medical Colleges, October 2-5, 1968. *J Med Educ* 1969; 44(Special Issue, September):739-44.

Muller S (Chairman). Physicians for the Twenty-First Century: Report of the Project Panel on the General Professional Education of the Physician and College Preparation for Medicine. *J Med Educ* 1984; 59:(Supplement, November 1984).

Tosteson DC. New Pathways in General Medical Education. *N Engl J Med* 1990; 322:234-238.

Rogers DE. The Education of Medical Students for Tomorrow. In: Harris D (ed). *Reform in Medical Education and Medical Education in the Ambulatory Setting.* Council on Graduate Medical Education, U.S. Department of Health and Human Services, Public Health Service, Health Resources and Services Administration, Rockville MD, 1991. (DHHS Pub. No. HRSA-P-DM-91-4.)

Vanselow NA. Graduate Medical Education: Time for a Change. In: Morris TQ, Sirica CM (eds). *Taking Charge of Graduate Medical Education: To Meet the Nation's Needs in the 21st Century.* Josiah Macy Jr Foundation, New York, NY, 1993, pp127-49.

33. Essentials of Accredited Residencies in Graduate Medical Education: Institutional Requirements. *Graduate Medical Education Directory: 1996-1997.* American Medical Association, Chicago IL, 1996, pp26-28.

34. Wyngaarden JB. The Clinical Investigator as an Endangered Species. *N Engl J Med* 1979; 301:1254-9.

Applegate WB, Williams ME. Career Development in Academic Medicine. *Am J Med* 1990; 88:263-7.

Cadman EC. The Academic Physician-Investigator: A Crisis Not to be Ignored. *Ann Int Med* 1994; 120:401-10.

Kelley WN, Randolph MA (eds). *Careers in Clinical Research: Obstacles and Opportunities.* National Academy Press, Washington, DC, 1994.

Kirschner MW, Marincola E, Teisberg EO. The Role of Biomedical Research in Health Care Reform. *Science* 1994; 266:49-51.

Varmus H. Shattuck Lecture — Biomedical Research Enters the Steady State. *N Engl J Med* 1995; 333:811-5.

Lee TH, Goldman L. Models of Postdoctoral Clinical Research Training. *J Invest Med* 1995; 43:250-61.

Neilson EG, Ausiello D, Demer LL, and the Association of Subspecialty Professors. Physician Scientists as Missing Persons. *J Invest Med* 1995; 43:534-42.

Crowley WF, Jr, Thier SO. The Continuing Dilemma in Clinical Investigation and the Future of American Health Care: A System-Wide Problem Requiring Collaborative Solutions. *Acad Med* 1996; 71:1154-63.

35. Whitcomb ME. The Role of Medical Schools in Graduate Medical Education. *JAMA* 1994; 272:702-4.

36. Governor's Ad Hoc Task Force on NYPHRM. *New Directions For a Healthier New York: Reform of the Health Care Financing System.* New York State Department of Health, Albany NY, 1995.

New York Health Care Reform Act of 1996.

37. Council on Graduate Medical Education. *Seventh Report.* U.S. Department of Health & Human Services, Public Health Service, Health Resources and Services Administration, Rockville MD, 1995.

38. JAMA Education Issue, September 4, 1996; 276:739-40 (Appendix II, Table 1).

39. Carnegie Commission on Higher Education. *Higher Education and the Nation's Health: Policies for Medical and Dental Education.* McGraw-Hill, New York NY, 1970.

40. 20th Anniversary of the National AHEC System: Projects in Review. *National AHEC Bulletin* (Special Edition), Fall 1990.

Fowkes VK, Campeau P, Wilson SR. The Evolution and Impact of the National AHEC Program Over Two Decades. *Acad Med* 1991; 66:211-20.

41. Report of the New York State Commission on Graduate Medical Education, New York State Department of Health, Albany, NY, 1986.

New York State Council on Graduate Medical Education. First Annual Report, 1988.

New York State Council on Graduate Medical Education. Fourth Annual Report, 1991.

Request for Proposals, Grants for Health Care Development. New York State Department of Health, Division of Planning, Policy and Resource Development, Albany NY, 1994.

New York State Primary Care Education and Training Act. Status Report: November 1994. New York State Department of Health, Bureau of Health Resources Development, Albany NY.

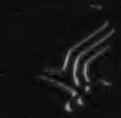
42. New York State Council on Graduate Medical Education. Graduate Medical Education Consortia: Guidelines for Certification. Draft – May 20, 1996.

43. Bonnyman GG Jr. Stealth Reform: Market-Based Medicaid in Tennessee. *Health Affairs* 1996; 15:306-14.

Meyer GS, Blumenthal D. TennCare and Academic Medical Centers. *JAMA* 1996; 276:672-6.

44. Thier SO. In: Morris TQ, Sirica CM (eds). *Taking Charge of Graduate Medical Education: To Meet the Nation's Needs in the 21st Century.* Josiah Macy Jr Foundation, New York, NY, 1993, pp41-9.

☆ U.S. GOVERNMENT PRINTING OFFICE: 1997 418-662/60316



BEST COPY AVAILABLE